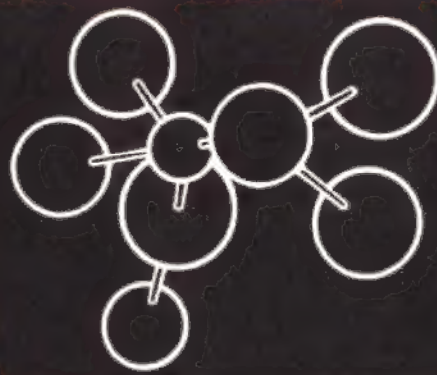


CATALOG No. 623



SCIENCE



MATH

Edmund catalog



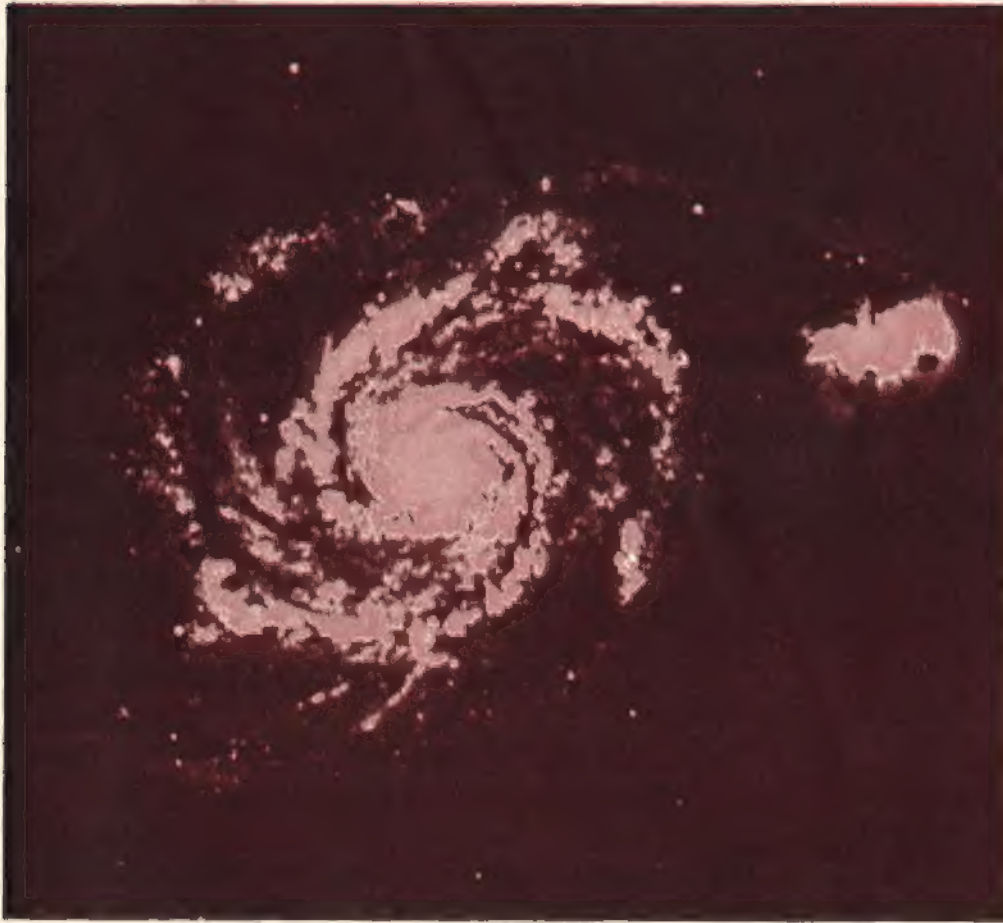
OPTICS

EDMUND SCIENTIFIC CO.

America's Greatest Science-Math-Optics Market Place

BARRINGTON, NEW JERSEY

Lincoln 7-3488 (Out Of State Calls — Use Code 609)



astronomy, telescopes and the age of space...

Nothing is more fascinating than ASTRONOMY, the study of the moon, the stars, and all the heavenly bodies. It is man's oldest science, and yet it is the basis for man's newest endeavor--the conquest of space.

Above all, Astronomy is fun! Few experiences equal the thrill that comes from observing the skies through a telescope. The amateur astronomer sees stars so distant that it took millions of years for their light to reach us. Even the smallest telescope brings out startling detail in the 240,000-mile-distant Moon. Saturn, with its famous rings, violent raging storms on the face of the sun, comets, double stars, far-off galaxies, all are among the wonders a telescope can bring to you.

Man's destiny is the stars. The young boy or girl astronomer of today, peering through the telescope at Mars or Venus, well may be the first to step on their surfaces. The age of space dictates that we all know about space. Your children can learn, painlessly and with enjoyment, through Astronomy. As a matter of fact, you'll find it equally enjoyable. Astronomy is one hobby that has no bounds of age, or sex, or creed.

Astronomy is not an expensive hobby. For less than thirty dollars you can make or buy a telescope that will bring the grandeur of the heavens to you. And astronomy is not necessarily a lonely hobby. You'll be able to join a local amateur astronomer's organization and enjoy intellectual, companionable associations. Star parties combine social life and stars.

Eventually, you'll want to specialize. Astro-photography is as easy as it is fascinating. You can, as you advance, study variable stars, meteor pattern detection, or specialize in moon or planetary work. Highly-skilled amateurs are now studying sun-spots and their effect on the ionosphere. Much is still to be learned of the skies--you can add to man's knowledge, even find and have a comet named for yourself.

If you are just beginning, please read the next page carefully. Whether you are beginner or expert--telescope "build-it-yourselfer" or "looker-through", we can supply you with low cost, high quality optics and parts--designed and produced for the amateur.

THE TRUTH ABOUT TELESCOPE POWER

Most beginners think only of "power" or magnification when planning to buy a telescope. Power is important, of course. But, it is only one of three functions of a telescope. The others are, increasing the apparent brightness of objects -- **LIGHT GATHERING POWER**, and bringing out detail that can not be seen by the unaided eye -- **RESOLVING POWER**.

Objective diameter alone determines the light gathering power of your telescope. Resolving power is related to the quality and diameter of the optics in your telescope.

Theoretically, there is no limit to magnification. However, in practice, there are four limitations to the use of high rates of magnification:

1. Over-magnification decreases clarity
2. Over-increase in magnification causes decrease in the brightness of the image.
3. Increase in magnification decreases the actual field of view in the sky.
4. Over magnification increases twinkling of stars and interferes with observation of stars that are close together.

Telescope experts agree that the top useful power of magnification is about 50 to 60X per inch of objective aperture; that is 180 power for a 3" telescope, 255X

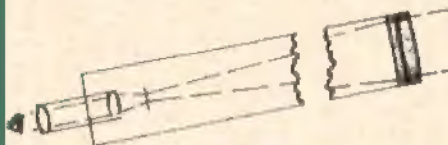
for a 4-1/4", or 360X for a 6". High power magnifies, but it magnifies **EVERYTHING**. As you go above 50 to 60X per inch, it magnifies the diffraction pattern to the point of producing a fuzzy image. It also magnifies heat waves, dust, clouds and air currents.

While you can get higher magnifications than 60X per inch of aperture with any telescope, it is simply empty magnification and of little or no value to you. Although many of the new companies that have rushed into the astronomical field to "cash in" on increased interest in Outer Space make fantastic claims which put us at a competitive disadvantage, we prefer a factual, honest approach. Hence we list the powers of our telescopes according to the rule of 60X per inch, rather than list theoretic, non-usable powers.

Do not be misled by power claims. Any telescope can give you extremely high powers. The catch is, you can't use it, and it actually is a disadvantage if your telescope image lacks clarity and sharpness. For optical quality, you have to depend on the reputation of the manufacturer. Our reputation is well known. We will not jeopardize it by making greatly exaggerated claims. Our telescopes, etc., are all "satisfaction guaranteed." You risk nothing and have much viewing pleasure to gain when you order an Edmund telescope.

WHAT KIND OF TELESCOPE SHOULD IT BE?

After you decide to make your own telescope, you should give some thought to the type of telescope you want. There are two basic types: the refractor and the reflector. While each has its advantages, as shown below, the reflector seems best for the beginner because of its economy of labor and materials.



THE REFRACTOR TYPE

The refractor telescope receives an image through an achromatic objective lens. For the amateur, this is a difficult to make system which requires precise color correction and expensive materials. However, once made, it is easy to use since it requires no adjustment of its optical system except focusing. The closed tube prevents the entrance of dust and moisture into the telescope, thus eliminating the need for servicing of the optical components.



THE REFLECTING MIRROR TYPE

The reflector telescope receives an image which has "bounced" off a concave, aluminized mirror. This image is reflected again from a diagonal mirror, bending the path of the image through a right angle and up through the eyepiece, which is generally located at the top or front end of the tube.

It is a great deal easier and cheaper for an amateur to grind his own reflector or to buy a finished mirror than it is to make or buy an objective lens of equivalent diameter. Assuming that the quality is good, the ability to resolve fine detail is usually a function of the diameter of the primary lens or mirror. Thus, with a reflecting telescope, you can see more and better for less money and effort.

WE RECOMMEND...

Years of experience with amateur telescope makers have taught us that making your own reflecting telescope, either by using already finished parts, or by



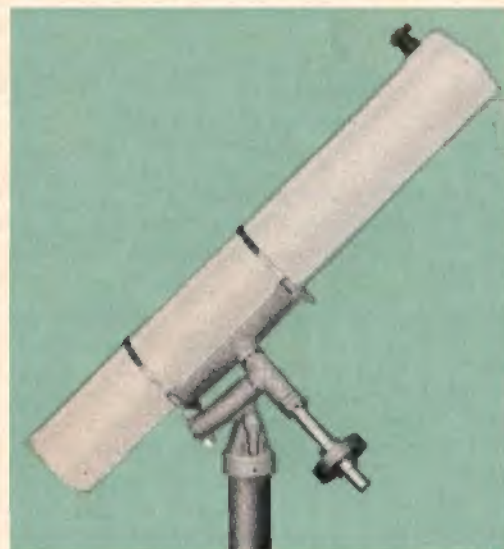
grinding your own mirror, generally produces a telescope as good, if not better, than any you could buy except in the very high price range. If you have the time and a little practical ability, you will find it easy to grind your own mirror.

However, our finished 4-1/4" mirror is priced so low that it may not be worth your time and effort to attempt to grind your own. If you plan a 6" reflector, the cost factor becomes great enough to make real economies possible by grinding your own. We supply the mirror blanks, the grinding and polishing compounds and the "tool".

Announcing

the new Edmund 8" reflector

DESIGNED SPECIFICALLY FOR SERIOUS AMATEURS, COLLEGES & SCHOOLS.



Here is an outstanding telescope, designed to meet the most exacting requirements of the serious amateur or astronomy course requirements in schools and colleges. It offers almost twice the light grasp of a 6". The mirror is a hand-corrected parabolic pyrex mirror of better than 1/4th wave, aluminized and overcoated. A matched set of precision-made, four element, fluoride coated orthoscopic eyepieces (6mm, 12.5mm and 25mm), is provided. Although supplied with a fine pedestal base, (described below) because of its massiveness, it is recommended for permanent installation. The heavy-duty equatorial mount (described below) is designed to minimize vibration and guarantee stability. A deluxe, wide-field finder scope of 5.5X is provided. Mount is finished in grey wrinkle-finish, has rugged phenolic 63 inch tube. Here indeed is an instrument



you will be proud to own--one that will provide years of viewing pleasure. Full instructions are included. The shipping weight is approximately 200 pounds.

COMPLETE 8" TELESCOPE including heavy-duty equatorial mount (see below) and pedestal base. **NO. 85,143 \$389.00** f.o.b. Barrington, N.J.

EQUATORIAL MOUNT ONLY — described below

TELESCOPE ONLY without equatorial mount or pedestal base. **NO. 85,144, \$277.00** f.o.b. Barrington, N.J.

PEDESTAL BASE ONLY

The rugged pedestal base of heavy cast-iron used in our new 8". Does not include cap. Post is 30" high, 4" inner diam. Three legs, each 2 ft. long for stability.

NO. 85,145 \$32.50 f.o.b. Barrington, N.J.



SETTING CIRCLES for above

As beautiful as they are useful. Smooth finished aluminum, 4" diameter, 1/2" thick. Numbers and line markings are engraved, black filled for night visibility. Center hole is 2-11/16". Time and Astronomy Booklet is included. **NO. 60,221 \$18.00** per set, Postpaid

EXTRA-HEAVY DUTY EQUATORIAL MOUNT FOR LARGER TELESCOPES

We are proud to announce the introduction of our new **HEAVY DUTY MOUNT** as used in above telescope. It has been designed specifically to properly handle any eight-inch telescope, either of amateur or commercial design. This is not a "souped-up 6" mount" but a completely new, modern design specifically tailored to fit this need.

It will fit any 6" telescope or hold any 10" reflector satisfactorily. It will also handle up to and including a five inch refractor. It has a 1-1/2" diameter polar and declination axis, and is made of cast iron to give a greater mass in the specific points where mass is most needed. It is indeed massive, weighing a full 75 pounds including counterweights. It will permit exact balancing, and has such other features as a specially designed, fine adjustment for latitude setting, positive shaft clamping, large bearing surfaces, and a specially designed, tube handle to allow tube rotation. It can be permanently mounted on a standard 4" pipe. This is a professional quality mount suitable for use by professionals, serious amateurs or in educational institutions.

NO. 85,134 \$79.50 plus shipping charges from Barrington, N. J.

Shipping weight: 85 lbs.





HIGH-POWERED- "THE SPACE 60 TO 180 POWER ONLY

This wonderful telescope is the ideal, low cost introduction to astronomy and the mysteries of space and the stars. You can pursue a fascinating hobby with a small investment.

THE MIRROR IS THE HEART OF YOUR TELESCOPE

If it is accurately made, you get good results. Otherwise, you do not. For several years we have sought a good, economical mirror. We are proud of the 3" finished aluminized and overcoated 1/4 wave mirror, F.L. 31", f/10, that we now supply. It provides true viewing quality.

FORK TYPE MOUNT AND HARDWOOD TRIPOD

This scope has a fork type equatorial mount with a 40° polar axis, a feature just not found on other telescopes in this price range. It allows a viewer to follow a star's movement with only one movement of the telescope, making it easy to keep the star in field of view. The tripod is 36" high.

MANY FEATURES FOUND ONLY IN BIG TELESCOPES!

From a construction standpoint, our 3" SPACE CONQUERER has many features experienced telescope enthusiasts consider necessary for viewing the heavens. The mirror is easily adjusted with three spring tension set screws. Tube is ventilated to prevent condensation on the mirror.

You get all the power you can use effectively. Instrument is sturdily made and really easy to use. You will get years of enjoyment.

AVAILABLE EYEPieces

1/4" focal length. Gives 120X with SPACE CONQUERER and about 320X when used with Barlow.

NO. 30,195 \$3.75 Postpaid

1" focal length (31X). Excellent for ground observation or looking at the moon.

NO. 30,194 \$3.50 Postpaid

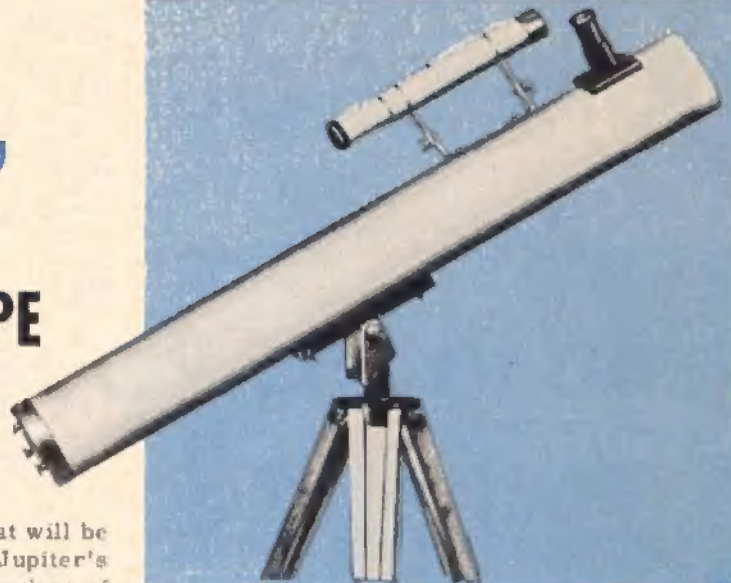
Mounted Symmetrical Eyepieces. A fine war surplus eyepiece, 3/4" focal length (41X). Contains 2 achromat lenses. Excellent for wide field viewing or for taking photographs through your telescope.

NO. 30,315 \$5.95 Postpaid



INEXPENSIVE CONQUERER™ 3" REFLECTOR TELESCOPE

\$29.95 Postpaid



you can introduce your children to the space age that will be so important to their futures. See Saturn's rings, Jupiter's moons, Mars' craters of the moon and the other wonders of the heavens. You'll enjoy hours of educational fun.

POWER

You receive a 1/2" f.1. Ramsden eyepiece which gives 60 power, more than enough for viewing the wonders of the sky. In addition, we include a Barlow lens, which when used with the 60X eyepiece brings power to 180X, the maximum effective magnification for this size scope.

Tube is strong spiral wound Kraft board with an attractive covering. Inside is a dull black to prevent glare. Included is an optical finder to help locate stars, planets, etc.

FREE WITH EVERY TELESCOPE



HOW TO USE YOUR TELESCOPE, 36-page booklet of telescope information; 272-page book, HANDBOOK OF THE HEAVENS, covering star clusters, asteroids, meteors, etc., and STAR AND SATELLITE FINDER plus booklet, STAR PATHS, and complete directions.

NO. 85,050

A REAL VALUE ONLY \$29.95 Postpaid

PERFORMANCE Data	
LIGHT POWER	YOU CAN SEE THINGS TO 80% BRIGHTER
RESOLVING POWER	DOUBLE STAR 3 SECONDS OF ARC
MAGNIFYING POWER	60X WITH 1/2" EYEPIECE ... UP TO 180X WITH BARLOW



ONE OF OUR MOST POPULAR

4 $\frac{1}{4}$ " PALOMAR

40 TO 255 POWER REFLECTOR

"DELUXE SPACE CONQUERER"

We call this telescope "DELUXE SPACE CONQUERER" because it brings all the pleasures of astronomy within the budget of almost everyone. The quality-minded beginner who wants to start right, the serious amateur who wants a scope with most of the features of ultra-expensive professional instruments, or schools or colleges which want to launch Space Age educational programs, will find this unit ideal.

Your SPACE CONQUERER will show you the craters and seas of the Moon, Rings of Saturn, Double Stars, Moons of Jupiter and many other astronomical phenomena. It is so powerful that you can read a newspaper headline at a mile. It gives all the power that can be used effectively in an instrument of its size. Higher power would be simply empty magnification.

COMPARE THESE QUALITY FEATURES AGAINST

SPHERICAL MIRROR

This telescope has a fine precision spherical mirror, thoroughly tested and guaranteed to resolve detail right to the theoretic limit. It is made of Pyrex, aluminized and overcoated for protection and long life. The mirror is $f/10$, accurate to $1/4$ wave. Note: This 4- $1/4$ " spherical mirror of $f/10$ will give the same results as a parabolic mirror. (See page 191 of Thompson's MAKING YOUR OWN TELESCOPE.)

STANDARD $1\frac{1}{4}$ " EYEPIECES

Uses American standard 1- $1/4$ " diameter eyepieces. Gives a wider field and allows later addition of more eyepieces for broader usage.

RACK & PINION FOCUSING

Eyepiece holder with micrometer-smooth action and variable tension control makes using this scope a real pleasure.

ALL THE POWER YOU CAN USE

Although "power" is a fetish with most beginners, most viewing is done with low power eyepieces. We provide a deluxe Kellner (2 achromats) eyepiece of 1 inch F. L. that gives 45X and a $1\frac{1}{2}$ " F. L. eyepiece that gives 90X. Included too is a MOUNTED BARLOW, which, used with the above, triples or doubles the magnification and gives powers of 170X and 180X.

BEAUTIFUL STYLE

IN STURDY CONSTRUCTION

This quality American made telescope is ready to use. Has a real aluminum tube 5" in diameter and 46" long. Provides a rigid mounting base for all components. Non-breakable and will last a lifetime. Well painted. Chrome nuts used in mountings. Truly a telescope you will be proud of.

SPECIAL CLOCK DRIVE!

This telescope with our motorized clock drive on mount is ideal for long viewing sessions or for group viewing as you don't lose object when switching viewers. Excellent for astro-photography.

NO. 85,107

telescope, clock drive on pedestal mount,

Shipping Weight 45 lbs. **\$109.50**

TRANSPORTATION
CHARGES COLLECT

NOW! LENS ERECTOR FOR TERRESTRIAL VIEWING

This new Edmund development adds real convenience to viewing objects on the earth. Just put the lens erector in your eyepiece holder, insert eyepiece and focus normally. You see everything right side up and correct as to left and right. Consists of polished chrome finish brass telescoping tubing that will fit any standard 1- $1/4$ " eyepiece holder. Tubing is 9- $1/2$ " long and slides 3" into eyepiece holder. Erecting system consists of two coated achromats.

NO. 50,276

\$9.95 Postpaid

WANT 540 POWER?

If you want to experiment with really high power, our supplementary eyepiece of $1/4$ " focal length is available. Gives powers of 180X and 540X when used with our Barlow lens.

NO. 30,204

\$4.75 Postpaid

TELESCOPES TYPE

- 2 EYEPIECES
- ATTRACTIVE WHITE TUBE
- RESOLVING POWER 1.3

**NOW! NEW
EQUATORIAL MOUNT
ON METAL PEDESTAL
PLUS SETTING CIRCLES
INCLUDED**



ANY OTHER MAKE OF TELESCOPE:

EASILY PORTABLE

The convenience of handling this telescope is a big advantage. Many fine telescopes of 6" or more are stored in attics and cellars simply because they are too massive to be readily moved. This telescope is easy to carry to friend's houses, on vacation, to club meetings, etc.

REAL EQUATORIAL MOUNT ON OUR NEW VIBRATION VIBRATION-FREE ALL METAL PEDESTAL

This mount enables you to follow moon, stars, and planets with only one movement. Adjustable to your own latitude. Correctly counterbalanced. Bearings for smooth movement. Large locking knobs. Sturdy construction. On vibration-free all metal pedestal that gives sure steady support to eliminate any wobble, torque or vibration.

6X FINDER TELESCOPE

6X finder with crosshairs makes locating any sky object truly easy.

GIVEN FREE!



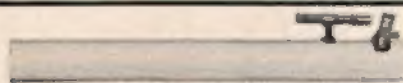
Included with each telescope is the new booklet, HOW TO USE YOUR TELESCOPE, our Star Chart and 272-page booklet, "Handbook of the Heavens"

SATISFACTION GUARANTEED!

We are so sure that you will get the full enjoyment you expect from our DELUXE SPACE CONQUERER that we unconditionally guarantee it. It is sturdily constructed, American made, will give years of service. You will find this scope compares very favorably with expensive, larger telescopes and will fill your needs at a considerable savings in cost. Order yours, today.

NO. 85,105 COMPLETE

\$79.50 TRANSPORTATION CHARGES COLLECT
Shipping Weight 42 lbs.



FOR THOSE WHO HAVE A MOUNT....

Telescope tube, finder telescope, mirror, eyepieces, everything but equatorial mount and pedestal mount.

NO. 85,113

\$61.00 plus Trans.

IMAGINE!

AND ONLY \$195.00

PLUS SHIPPING FROM BARRINGTON, N.J.

THE SUPER SPACE CONQUERER IS
COMPLETE! NO EXTRAS TO BUY!

The six inch SUPERSPACE CONQUERER is a superb instrument. Most important, it is complete! It includes electric clock drive, setting circles, heavy-duty equatorial mount and a pedestal base. As is, without any expensive extras, it fills the demands that most serious amateurs, colleges or universities place on a telescope.

With the SUPER SPACE CONQUERER you can see, clearly and sharply, Rings of Saturn, Jupiter's moons, Mars, craters of the moon and all the wonders of the sky. It will reveal faint stars to nearly 13th magnitude, and split double stars separated by less than one second of arc. Its optical quality and stability have brought us many compliments.

Compare these features with any telescope even telescopes costing \$295.00 to \$350.00

PYREX PARABOLIC MIRROR, hand-finished to 1/4 wave, corrected to the theoretic limit of resolution, aluminized and overcoated, F/8, 48" F. L.

FOUR EYEPieces include a wide-field 1" achromatic Kellner for 48 power, 1/2" and 1/4" Ramsdens for 96 and 192 power and a Barlow that will double and triple these powers to as high as 576X, although this is beyond the recommended magnification for this size of scope. You get all the power you can use. Eyepieces are all standard, 1-1/4" outer diameter.

OTHER FEATURES INCLUDE... 6X ACHROMATIC FINDER SCOPE...STURDY ALUMINUM TUBE IN WHITE BAKED ENAMEL FINISH, FLAT BLACK INSIDE.... HEAVY-DUTY EQUATORIAL MOUNT, correctly counter-balanced....SETTING CIRCLES....NEW ALL-METAL "no wobble--no vibration" PEDESTAL BASE....RACK AND PINION FOCUSING...and of course, THE ELECTRIC CLOCK DRIVE, ideal for long or group viewing sessions and astro-photography, operates on house current. Includes "Handbook of the Heavens", "Star and Sattellite Finder", "How to Use Your Telescope" and full directions.

Optics is our main business--we are the world's largest optical mail order house. For that reason we have added all the little touches that many people don't notice, that most manufacturers don't bother with. For example, we optically coat surfaces to eliminate glare and improve star images. Our mount is astronomer-designed--compare its rugged construction with any other! Our optical parts-- mirrors, eyepieces, etc.-- are unsurpassed. The SUPER SPACE CONQUERER is truly one of the few cases where you can save money without sacrificing quality. Order yours today--start on years and years of pleasurable viewing.

NO. 85,086 COMPLETE \$195.00

Shipping Weight 68 lbs. TRANSPORTATION CHARGES COLLECT

THIS EDMUND 6" REFLECTOR IS EDUCATOR-ACCEPTED

In just the last few months, we have received orders for our 6" reflector from universities, colleges and high schools in California, Indiana, Washington, New York, South Carolina, Texas, Pennsylvania, Ohio, Wyoming, New Jersey, Louisiana, Wyoming, Kansas and Illinois. This fine instrument is acceptable for purchase under NDEA.



3" ASTRONOMICAL REFRACTOR TELESCOPE UP TO 180X AND MORE



NO. 85,032
SETTING CIRCLES
INCLUDED

Only \$125.00

A complete, attractive instrument ready to use. See the planets, stars, moon and all the wonders of the sky in sharp detail. The 3" airspaced achromatic objective has been tested by famous astronomers and pronounced equal to any you can buy. An excellent telescope at an amazing low price.

LOOK AT THESE QUALITY FEATURES:

Standard 1-1/4" outer diameter Eyepieces: one 1/2" F. L. 90X, one 1" F. L. 45X, 1-Barlow lens that will triple or double the above eyepiece powers. Giving you a power range of 45X, 90X, 120X, 270X.

Equatorial mount with counter-balance gives you fingertip control of the telescope. Large 1-1/4" dia. knobs operate the rigid axis locking mechanism. May be easily adjusted to an altazimuth type mount for terrestrial viewing.

Tripod legs are 60" long of natural finish hardwood.

4" REFRACTOR UP TO 240X AND MORE

COMPLETE WITH EVERYTHING NEEDED for viewing satisfaction--6X Finder, Sturdy Equatorial Mount, Setting Circles, Tripod, Eyepiece Extension, Star Diagonal, Three Standard 1-1/4" outer diam. Eyepieces, A Barlow (gives 480X, 720X for your experimentation although these powers are not recommended) Star Book and Star Chart.

Everything about this refractor is massive--the mount is built from heavy iron castings with machined bearings for smooth operation. The tripod has extra heavy 60" hardwood legs. This telescope's sheer weight (42 lbs.) allows steady viewing such as you wouldn't believe possible with a tripod.

The big 4" objective is an air-spaced achromat, with elements coated on all sides for low reflection. Focal length of the objective is 60", speed f/15. The three eyepieces supplied with the telescope give you 60X, 120X and 240X. A special Barlow lens, also supplied, 480X, 720X. A star diagonal is included for comfortable viewing at high angles. The tube is white enamel coated on the outside for attractive appearance, and specially coated on the inside to cut down stray light reflection. Stops are provided inside the tube for better image quality.

Rack and pinion focusing gives you smooth operation with a full 4-5/8" travel. All metal parts are plated to prevent rusting. The mount is gray kinkle finish. Adjusting knobs 1-3/4" diameter for more positive locking. Equatorial mount is adjustable for all latitudes. Finder is 6-power, easy adjustments for accurate finding.



NO. 85,038

\$247.00

TRANSPORTATION
CHARGES COLLECT
Shipping Weight 58 lbs.

Same telescope with Clock Drive

Same telescope with motorized clock drive on mount. Shipping Weight 60 lbs.

NO. 85,087 **\$276.50**

TRANSPORTATION CHARGES COLLECT

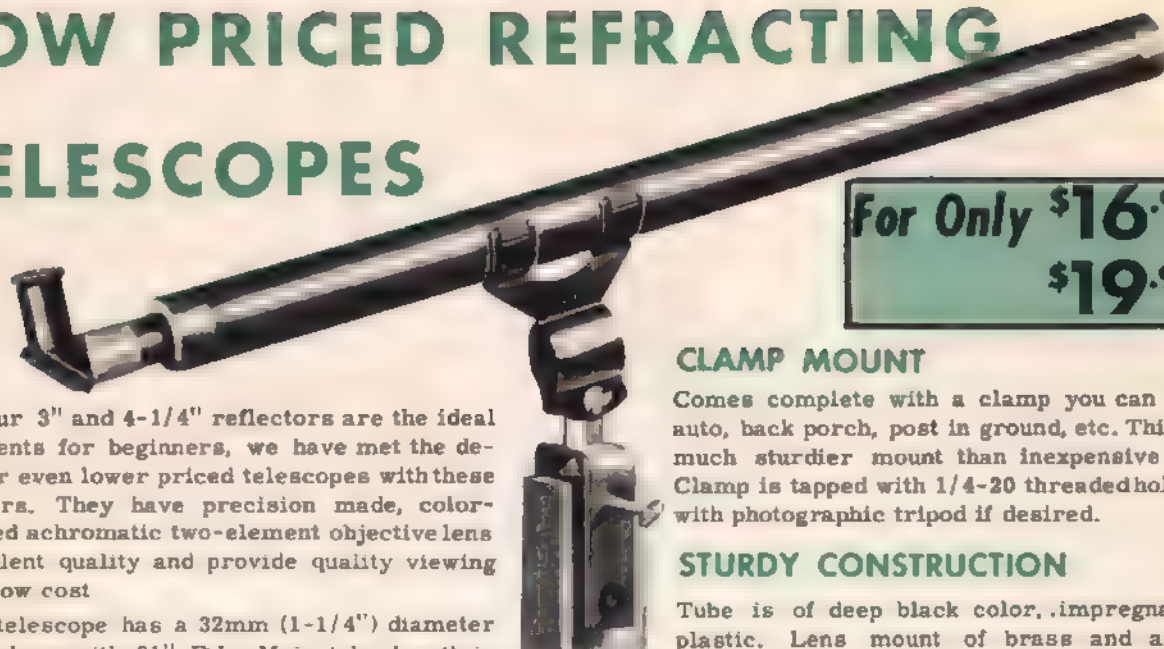


ERECTOR ASSEMBLY

Prism erecting system housed in sturdy mount with standard 1-1/4" eyepiece opening. Will fit into any standard eyepiece opening. Make your astronomical telescope a more useful instrument and get breathtaking close-ups in terrestrial viewing!

NO. 70,078 **\$12.50 Postpaid**

LOW PRICED REFRACTING TELESCOPES



**For Only \$16.⁹⁵ to
\$19.⁹⁵ Postpaid**

CLAMP MOUNT

Comes complete with a clamp you can attach to auto, back porch, post in ground, etc. This gives a much sturdier mount than inexpensive tripods. Clamp is tapped with 1/4-20 threaded hole for use with photographic tripod if desired.

STURDY CONSTRUCTION

Tube is of deep black color, impregnated with plastic. Lens mount of brass and aluminum. Clamp is of plated steel. Tube holder has two point contact for rigid holding. No finder scope is included but it is easy to sight along tube to line up star.

TUBE GLARE STOPS Although these are usually not found in lower priced telescopes, we have included them.

NO. 80,060

For Only \$16.⁹⁵ Postpaid

While our 3" and 4-1/4" reflectors are the ideal instruments for beginners, we have met the demand for even lower priced telescopes with these refractors. They have precision made, color-corrected achromatic two-element objective lens of excellent quality and provide quality viewing at true low cost

This telescope has a 32mm (1-1/4") diameter objective lens with 31" F.L. Main tube length is 27-1/2". Power with 5/8" F.L. mounted Ramsden (supplied) is 50X. Mounted Barlow lens provided to give you 75 power and 150 power. We do not recommend 150 power for this size objective. Complete directions explaining how to arrive at these powers easily is included.

FIRST SURFACE MIRROR DIAGONAL to let you avoid bending, stooping or uncomfortable positions.

LARGER OBJECTIVE MODEL TELESCOPE

This telescope has all the features of the above one, except objective is 42mm (1-21/32") diameter and 41" focal length. Main tube length is 38". This 42mm precision achromatic objective has almost twice as much light gathering power (84% more) as the 32mm scope. You get a brighter image and can see fainter stars, smaller craters of the Moon and get better resolving power. We recommend purchase of this model, if possible. Its increased performance more than justifies the small increase in cost. You get 1-15mm F.L. Ramsden eyepiece, this gives 67 power when used alone. We recommend this for craters on the Moon. 1-Barlow lens: When you use this with the 87 power eyepiece the power becomes either 100X or 200X depending on the space between the eyepiece and the Barlow lens. 200X is beyond the recommended magnification for this size objective. Complete directions explaining how to arrive at these powers easily is included.



Powers are 67X, 100X and 200X.

NO. 80,061

\$19.⁹⁵ Postpaid

ACCESSORIES FOR THE ABOVE TELESCOPES

ERECTOR ASSEMBLY

These are true astronomical telescopes and give an upside down image which doesn't matter for astronomical viewing. To view objects on the ground you need an erector lens assembly. This slides into the focusing tube and eyepiece goes in other end. Used one way it cuts power in half, the other way it doubles power.

NO. 30,267

\$2.95 Postpaid

EYEPIECES

No.	Focal Length	Power with 32mm Obj.	Power with 42mm Obj.	Price Postpaid
30, 194	1"	31X	41X	\$3.50
30, 195	1/4"	124X	164X	\$3.75

TRIPOD

Hardwood legs, 36" long and adjustable height post gives you a total height of 66". Includes cradle clamp for holding telescope.

NO. 80,059

\$8.25 Postpaid

Making Your Own Telescope

AN EASY INEXPENSIVE HOBBY!

It's true that ready-made telescopes are expensive. For instance, a good refractor with 4-1/4" objective lens would cost about \$250. But you can buy all the finished optical parts to make a fine 4-1/4" diameter, 45X reflecting telescope for only \$18.25, and you will see as much and as good as you would with the more expensive telescope. Tubes and metal parts can be purchased or made depending on your ability.

Telescope making can be advanced or basic as you wish. Some amateurs make every part of their telescope including grinding of the objective mirror. Others make some of the parts and buy the rest. Others limited to time, facilities, etc., buy the complete telescope.

Select the type and size of the telescope you wish to begin with and consult this catalog for price, details, direction books and booklets, etc.

THOUSANDS OF PEOPLE HAVE FOUND TELESCOPE MAKING EASY!



A breathtaking close-up of the Moon through a telescope you might make!



Grind your own mirror... and save!

Starting on a small scale about 1925, there has been an ever-increasing group of amateur telescope makers in this country. They grind and polish their own mirrors, usually in the 8" diameter. They purchase the parts they need, either in a rough state, or ready-to-assemble.

Amateur telescope makers have designed and built amazingly complex telescopes--instruments capable of following the movement of stars automatically--instruments powerful enough to have discovered

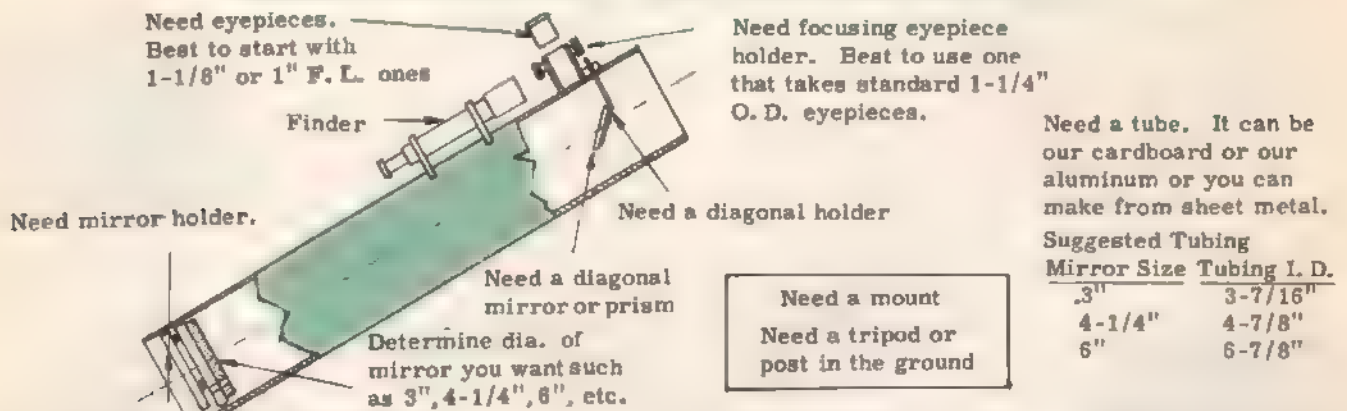
new phenomena in the heavens--instruments, in short, that would cost hundreds of dollars if bought ready-made. Yet many have been built by men and women with no previous experience or ability! We've had photographs and descriptions of hundreds of telescopes completed by people in all walks of life and of all ages.

You can get started today by looking over our catalog pages and deciding which kit or telescope you want.

Assemble your telescope from finished parts!



SUGGESTIONS FOR THOSE WHO WANT TO BUILD THEIR OWN REFLECTING TELESCOPE



Telescope Part	6" Reflecting Scope	4-1/4" Reflecting Scope	3" Reflecting Scope
Eyepiece Holder	50,077 or 60,067	50,077 or 60,067	60,067 or 60,070
Diagonal Holder	60,049 or 50,025	60,035 or 50,025	60,035 or 40,276
Diagonal Mirror	30,188 or 534	30,260 or 534	30,259 or 597
Mirror Mount	50,117	50,079	50,109
Tube (not drilled or painted)	85,008 or 85,014	85,013 or 80,038	80,056
	for 48 to 54" f.l. mirrors)		
Mounts and tripods	85,023	85,023 or 85,009	80,065

The above stock numbers are listed with prices in Astronomical Section of this catalog.

Choose your eyepieces, finder, etc., from selection we offer.

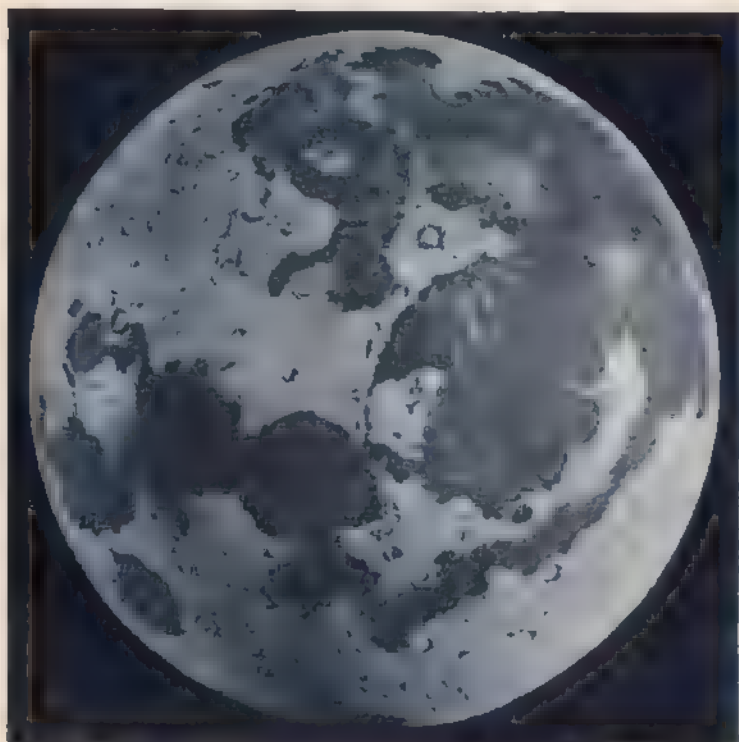
EDMUND IS HEADQUARTERS FOR SUPPLIES FOR MAKING YOUR OWN TELESCOPE OR FOR ACCESSORIES TO IMPROVE THE PERFORMANCE OF THE SCOPE YOU HAVE.

In the next pages we list kits and materials for making your own telescope, or eyepieces, clock drives, better mounts ideal for making your present telescope more useful to you. Look them over. Remember, all are sold to you under the Edmund guarantee of satisfaction.

ALL NEW MINI-MOON

Edmund designed and developed.

Educational relief scale model of the moon.



• EDUCATIONAL SCALE MODEL

• UNIQUE, DIFFERENT HOME DECORATION

• GIFT OF GIFTS FOR AN ASTRONOMER FRIEND

This three dimensional model is as exact a replica, in relief, of the Moon as seen through a telescope as the model-maker's art will permit. You can study various features of the Moon--from Ocean of Storms, 2 million square miles, to craters such as Aristarchus, 29 miles in size--all proper surface size and distance relationships. Principal peaks rise $1/8$ " from surface. In all, more than 30,000 formations can be studied.

The beauty of this model and its low cost of only \$12.50 make it the ideal gift to an astronomer friend, or as an outer space "conversation piece" in your den or living room. Its accuracy is such that schools, museums and institutions will find it doubly valuable as a teaching aid, and an outstanding space science display unit. Can be sidelighted, and a motor or our display turntable (MISC.) used to rotate it. With proper rotation and lighting, you can show Moon Phases. Or "black-light" can be used for spectacular effects.

It is 12" in diameter, with stand, and weighs approximately $3/4$ lb. It is molded of tough washable plastic, in three colors. Can be marked to emphasize formations without damage. Reverse is blank and you can paint with watercolors to indicate present Russian satellite information, and update as more information is acquired.

NO. 70,515

\$12.50 Postpaid

TIDE AND MOON MOTION INSTRUCTIVE

This Edmund learning and teaching aid clarifies two very important and very misunderstood subject areas--the movement of the moon about the earth, and the tides of the world. Device consists of a black board, $14-1/2" \times 11-1/2"$ representing outer space, marked with arrows indicating the location of the sun, an earth $1-3/4"$ in diameter and a moon $1"$ in diameter mounted on a representation of the elliptic orbit of the moon with tide pattern indicated. A clearly written, profusely illustrated instruction booklet explains how to demonstrate many concepts. It is equally usable by the amateur working alone, or in classroom.



NO. 70,445 \$5.00 Postpaid

NEW EDMUND STAR FINDER--

ideal introduction to astronomy!



Any child, or adult, whose interest has been whetted by outer space talk, will find this new Edmund star finder the happy, easy way to explore the fascinations of the sky. No previous knowledge of constellations, or even any accurate knowledge of time, location or direction factors is necessary. With this precision made metal instrument, any observer can quickly locate and identify any charted visible star. Its just as easy to aim at an unknown star and identify it from the star map that is included or to locate a particular star on star map first, and then in sky. No calculations, time signals or almanacs are needed. It has no blind spots, any part of the sky can be examined. The view is erect, same size, same brightness. Full adjustment for use anywhere in the U. S. or Canada is provided.

It will prove extremely useful to Power Squadrons, Boy and Girl Scout Groups, Schools, Amateur Astronomy Clubs. Persons with telescopes who have exhausted moon and planet views will find it a handy area localizer for double stars, clusters and nebula. It can also be used for study of elementary celestial navigation or to demonstrate principles of surveying. Overall size is $8" \times 4"$ wide $\times 7-1/4"$ deep. It is designed for use on any photo tripod or simple mount. (Suggestions for mounting are included). Full directions included.

NO. 70,501 \$9.08 Postpaid

MIRROR GRINDING KITS

The ultimate thrill for the amateur telescope maker is grinding his own mirror. It is a project requiring patience, but one that pays off in much satisfaction and a real saving in money.

ASTRONOMICAL MIRROR GRINDING KITS

Complete kits including blank, tool and abrasives



Our kits make it easy! Kits contain: a pyrex mirror blank, in the size listed, and plate glass tool used to grind the mirror; 2 lenses for eyepiece, which only require mounting to give you an excellent 1" focal length eyepiece; a fine quality finished and aluminized first surface mirror diagonal; a magnifying lens for inspection. We also supply 8 assorted abrasives from coarse to fine in shaker top containers, and tempered Burgundy pitch. We do not supply instructions, because successful results require detailed directions which can be found only in books on the subject. See our list of books at the end of our Astronomy section.

Stock No.	Dia. Mirror	Thickness	Price
70,003	4-1/4"	3/4"	\$7.50 postpaid
70,004	6"	1"	11.95 postpaid
70,005	8"	1-3/8"	19.50 postpaid
70,006	10"	1-3/4"	30.75+ shipping*
70,007	12-1/2"	2-1/8"	59.95+ shipping*

*Transportation charges collect from N.J.

MIRROR BLANKS

Pyrex mirror blanks and plate glass tools for those who wish to grind their own mirrors but do not require complete kits as above.

PYREX MIRROR BLANKS

No.	Price	Thk	SIZE
			3"
80,016	\$2.75	3/4"	4-1/4"
80,017	4.95	1"	6"
80,009	8.50	1-3/8"	8"
80,000	17.50	1-3/4"	10"

All above are postpaid items. Note that the 3" and 4-1/4" tools can be used as mirror blanks, if desired.

80,010	\$30.60	2-1/8"	12-1/2"
Weight: 22 lbs.			
80,015	\$16.00	1"	
Weight: 14 lbs.			
			15-1/4"
85,141	\$ 8.00	1-1/4"	
Wt: 21, Ship. Wt: 30 lbs.			
			26"
85,140	\$25.00	1-1/4"	
Wt: 63, Ship. Wt: 75 lbs.			

These, because of their weight, are FOB: Barrington. They will be shipped via railway express collect.

PLATE GLASS TOOLS

No.	Price	Thk
40,037	\$1.25	3/8"
80,011	2.00	5/8"
80,012	2.85	5/8"
80,013	5.75	3/4"
80,014	12.00	1"

SPECIAL

NEW PYREX SCHMIDT MIRROR BLANKS

Here is a bargain in a pyrex mirror blank. It is 6-3/4" diameter. Thickness 5/8". Place for hole in center 1-3/4" in diam., glass here only about 1/8" thick so it can be cut out easily if necessary. Made for a mirror with radius of 7-3/4" (9-7/8" f.l.) but surface not polished.

NO. 70,170

\$2.50

Postpaid

MATERIALS FOR GRINDING MIRRORS

ABRASIVES

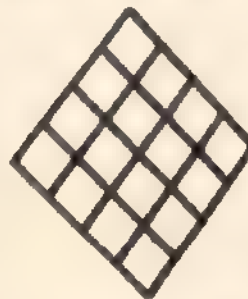
Now you can buy abrasives without getting larger quantities than you can use. The abrasives listed below from coarse to extra fine and should be used in the order listed. We pack them in shaker top containers to help you do a neat job and to reduce waste. All are guaranteed free from contamination.

Stock No.	Description	Quan.	Price
40,022	#80 Alundum	16 oz.	1.25
40,021	#120 Alundum	6 oz.	.80
40,020	#220 Alundum	4 oz.	.80
40,019	#320 Alundum	3 oz.	.80
40,018	#400 Alundum	3 oz.	.80
40,017	#600 Alundum	2 oz.	.80
40,016	#305 Emery	2 oz.	.60
40,015	Red Jewelers Rouge	8 oz.	1.00
40,152	Cerium Oxide	4 oz.	1.50
40,153	Cerium Oxide	8 oz.	2.75
40,158	Barnesite	4 oz.	1.60
40,159	Barnesite	8 oz.	2.80

ACCESSORIES

RUBBER PITCH LAP

Saves mirror grinders time and trouble



A rubber pitch lap mat is used for forming the pitch lap channels. Pour the melted pitch on the tool, lay our pitch lap mat on top then press it in with your mirror to form channels. When it sets, an easy pull will remove the mat. In minutes instead of hours you are set to polish. Eliminates time consuming and tedious hand cuttings of channels in the pitch lap.

All those disappointing break-outs of the pitch, common when hand cutting the channels, are avoided, sometimes making necessary the pouring and cutting of two or three, before getting a usable lap. With our Rubber Pitch Lap Mat you can use the first one.

No.	Size	For Mir. Dia.	Price Pd.
50,171	13-1/2" x 13-1/2"	8", 10", 12"	\$2.00
60,061	6" x 6"	4-1/4", 5"	1.00

TEMPERED BURGUNDY PITCH

For making "pitch lap". No rosin or beeswax need be added. In 1/2 lb. container. NO. 40,023 50¢ Ppd.

6" MIRROR GRINDING TEMPLATE

Includes template to use when grinding 6", f/8 mirror, sighting ring & collimating directions for 6" telescope.

NO. 40,316

25¢ Postpaid

TELESCOPE KITS WITH COMPLETED MIRRORS

Make your own telescope with these mirror kits containing a finished mirror, eyepiece lenses and diagonal! Complete instructions with every kit.

3" MIRROR TELESCOPE KIT

All the optical parts you need to make a 31 power astronomical reflector telescope.

You get:

1. A 3" dia. mirror, aluminized and overcoated with silicon monoxide. Ground and polished to 1/4 wavelength.

2. Aluminized diagonal mirror. (1/2"x3/4" F. S.)

3. 2 PCX lenses to make a 1" focal length Ramsden eyepiece.

4. Directions for spacing, mounting hints, etc.

NO. 50,081 \$9.95 Postpaid

4 1/4" MIRROR TELESCOPE KIT

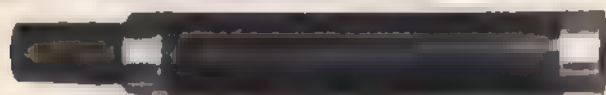
All the optical parts you need to make a 45 power astronomical reflector telescope.

Same parts as above except: Alum. Diag. Mirror 25x35mm. A 4-1/4" dia. Pyrex mirror, aluminized and overcoated with silicon monoxide. Ground and polished to 1/4 wave length accuracy. Focal length 45".

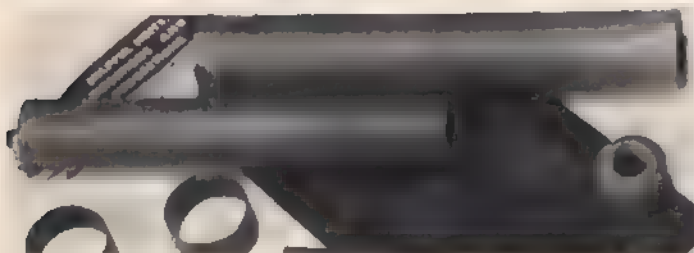
NO. 50,074 \$16.25 Postpaid

NOTE: The above items are telescope optics kits. They do not include tubes, mounts, etc. You can make your own or buy completed ones from us. See listings by parts.

ATTENTION - BEGINNERS' CLUBS MAKE 8 POWER ASTRONOMICAL TELESCOPE



FROM LOW COST BEGINNER'S KIT



Every boy or girl of today dreams of being a part of the exploration of outer space. That desire makes building his own telescope a real thrill. Now, any boy or girl of Cub Scout or Brownie age on up can make his own astronomical 8-power telescope in one evening without tools or machinery.

Here is an ideal attractive group project for scouts, junior astronomy clubs, or similar adult or youngster groups. (See special quantity prices) Scope is powerful enough to show craters of the moon, Jupiter's moons, and many stars not visible to the naked eye.

Kit includes objective lens, field lens, eye lens, glare stops, kraftboard tubes, cadmium plated metal ferrules, etc., to make an 18" long, 1-3/4" diameter telescope of 8 power

SPECIAL

NO. 70,238 \$3.00 Each Postpaid
NO. 70,239 5 Kits \$12.50 Postpaid
NO. 70,240 10 Kits \$22.50 Postpaid

MIRRORS

ASTRONOMICAL TELESCOPE MIRRORS 1/4 WAVE OR BETTER

POLISHED, ALUMINIZED & OVERCOATED

No.	Dia.	F. L.	Thickness	Price
30,219	3"	18"	3/8"	7.65 postpd.
50,082	3"	30" Pyrex	3/8"	7.65 postpd.
50,051	4-1/4"	45" Pyrex	5/8"	15.00 postpd.

PARABOLIC MIRRORS (Pyrex)

No.	Dia.	F. L.	Thickness	Price
5002	6"	48"	1"	59.50 postpd.
85,089	8"	64"	1-3/8"	*\$89.00 fob
85,070	10"	80"	1-3/4"	*\$179.00 fob
85,071	12-1/2"	100"	2-1/8"	*\$275.00 fob

*F. O. B. Barrington, New Jersey

STANDARD QUALITY MIRROR MOUNTS

3" MIRROR MOUNT

An excellent low-cost mount. Disassembled, with directions. Outer diam. 3-1/2". Fits our No. 80,056 cardboard tube or No. 85,012 alum. with shims.

NO. 50,109 \$2.95 Postpaid



4 1/4" MIRROR MOUNT

Adjusting clamps act on mount alone. Metal clips hold mirror to mount. 2-point suspension. Mount O.D. 4-7/8". Fits our No. 85,013 alum. tubing, can be shimmed for No. 80,038 cardboard tube. Unassembled with directions.

NO. 50,079 \$3.95 Postpaid

6" MIRROR MOUNT

Cast aluminum. Completely assembled. Metal clips hold mirror firmly. Outer diameter of mount is 6-13/16". Fits tubing No. 85,104 alum. or No. 85,008 cardboard.

NO. 50,117 \$7.50 Postpaid

8" MIRROR MOUNT

Cast aluminum, assembled. Metal clips to hold mirror. Outer diameter 8". Fits (with shims) our tubing No. 85,139 cardboard or No. 85,146.

NO. 70,072 \$10.50 Postpaid

10" MIRROR MOUNT

Cast aluminum. Adjusted by heavy bolts instead of springs to guarantee stability. Outer diam. 11-3/4".

NO. 70,556 \$25.00 Postpaid

DELUXE QUALITY MIRROR MOUNTS

Here is the ultimate in mirror mounting. These are cast aluminum flotation cells that support your mirror at nine points. Each pad is accurately positioned, supports an equal area of mirror. There is no uneven strain due to mirror flexure. A special positive collimation lock is provided. Each is primed, painted black. Satisfaction guaranteed, of course.



NO. 70,536 (8" Mirror 9 1/4" O.D.) \$26.74 Ppd.
NO. 70,537 (10" Mirror 12" O.D.) \$33.75 Ppd.
NO. 70,538 (12 1/2" Mirror 15" O.D.) \$42.50 Ppd.

EYEPIECE MOUNTS

REFLECTING TELESCOPE EYEPIECE MOUNT

Now, for the first time at this low price, a real rack and pinion focusing mount. Takes standard 1-1/4" eyepieces. Micrometer-smooth focusing action, travel 2-1/4". Two focusing knobs, variable tension. Four mounting holes for greater rigidity, nuts and bolts included. Black wrinkle finish with chrome tube.



NO. 50,077 (less diagonal holder)
\$8.50 Postpaid

DIAGONAL HOLDERS

NO. 60,035-3" to 4-1/4" telescopes \$1.00 Ppd.

NO. 60,049- 6" telescopes \$1.00 Postpaid

STANDARD 1-1/4" EYEPIECE HOLDER

Here is an economical plastic slide focus eyepiece holder for 1-1/4" O. D. eyepieces.

The unit includes a 3" long chrome plated tube that your eyepiece fits into for focusing. Diagonal holder in illustration is extra and not included.

Diagonal holders at top of this column also fit this eyepiece holder.



NO. 60,067 \$2.50 Postpaid

0.917 INCHES EYE-PIECE HOLDER



A low cost slide focusing eyepiece holder for those who want to make an inexpensive astronomical reflector telescope.

Mount is made of black plastic. Sliding tube is made of phenolic impregnated Kraft-board, and takes microscope size eyepieces (0.917" O. D.)

NO. 60,070 \$1.00 Postpaid

DIAGONAL HOLDER FOR 3" TELESCOPE

This will fit on the above eyepiece holder, or use on telescopes where tube is 3-1/2" I. D.

NO. 40,276 50¢ Postpaid

Abney Reflecting HAND LEVEL

Improved model enables more accurate calculations. Flat base makes it usable as clinometer, or for measuring angles. Graduated in degrees from 0° to 90°. Direct vernier reads from 1 to 10 minutes. Arc swings from 0° to 90°. Adjustable bubble level. Leather carrying case and shoulder strap included. Length 5"



STOCK NO. \$14.95
50,016 postpaid

MIRROR DIAGONALS

1/4 WAVE ELLIPTICAL MIRROR DIAGONAL FOR 6" TELESCOPES

Aluminized and overcoated. Ground and polished to 1/4 wave length. Just the right size for an f/8, 6" diameter telescope using normal focal length eyepieces. Size: major axis 1-3/4", minor axis: 1-1/4" Thickness 3/8".



NO. 30,188 \$3.75 Ppd.

1/8 WAVE ELLIPTICAL MIRROR DIAGONAL FOR 6" TELESCOPES

Same size as above aluminized and overcoated ground and polished to 1/8 wave length. NO. 30,205 \$5.00 Ppd

LARGER SIZE ELLIPTICAL DIAGONAL MIRROR

Ground and polished to 1/4 wave length or better. This size is needed when long focal length, wide field eyepieces are used (1-1/2" F. L. or longer). Used on an f/8, 6" diameter mirror, or use this size on 8" diameter mirrors with normal focal length eyepieces. Size: 1-1/2" minor axis; 2-1/8" major axis. Thickness 3/8".

NO. 30,258 \$5.75 Postpaid

OTHER SIZE ELLIPTICAL DIAGONAL MIRRORS 1/4 wave or better

No.	Size	Thick.	Mirror Size	Price
30,269	7/8 x 1-15/64"	1/4"	3"	\$3.50
30,260	1-1/16 x 1-1/2"	1/4"	4-1/4"	3.75
30,261	1-7/8 x 2-21/32"	3/8"	8"	12.00

REFLECTING TELESCOPE SPIDER MOUNT



Brass 4-legged spider adaptable to tubes 5" to 9" I. D. Takes mirror or prism. Plate on exact 45° angle, 1-1/2" x 2". Adjustable with set screw. Mounting instructions. NO. 50,025 \$4.25 Ppd.

PRISM DIAGONALS AND MOUNTS

Aluminized and Overcoated
Prism Diagonal cemented to 4-3/4" length rod and holder. Prism face 25 x 34mm. For 4-1/4" telescope.

NO. 60,086 \$3.00 Postpaid



Prism Diagonal cemented to angle bracket. Prism face 21 x 29mm. For 3" telescope.

NO. 60,087 \$2.25 Postpaid



TELESCOPE TUBING

TELESCOPE TUBING - All Sizes

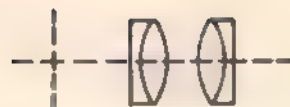
S. N.	L. D.	O. D.	Lgth.	Description	Price
80,055	3-7/16"	3-3/4"	32"	Spiral wound paper	\$1.50
80,039	4-7/8"	5-1/4"	48"	Spiral wound paper	2.50
85,008	6-7/8"	7-3/8"	60"	Spiral wound paper	4.00
85,051	1-7/8"	2"	48"	Aluminum	3.00
85,011	2-7/8"	3"	48"	Aluminum	6.00
85,012	3-7/8"	4"	60"	Aluminum	8.75
85,013	4-7/8"	5"	46"	Aluminum	9.00
85,014	6-7/8"	7"	60"	Aluminum	15.00
85,139	9"	9-3/4"	72"	Spiral wound paper	12.00
85,146	9-1/4"	9-1/2"	63"	Phenolic tubing	30.00

All tubing is shipped Transportation Charges Collect.

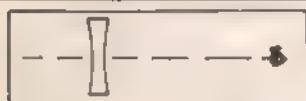
EYEPIECES

The function of the eyepiece is to magnify and make clear the detail present in the image produced by the objective. The eyepiece should be well corrected. Some of the more commonly used types are listed here:

SYMMETRICAL



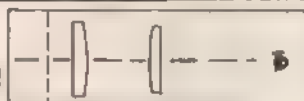
Two identical achromats spaced a small distance apart.



CONCAVE LENS

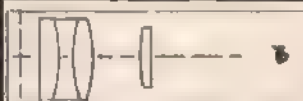
Used in Galilean telescopes. Only type that gives erect image. Good only for extremely low power. Very narrow field of view. Single simple lens.

RAMSDEN



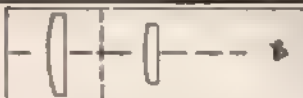
Two plano-convex (or double-convex) lenses. Economical type. Real image formed in front of field lens. Field 35 to 45°. Two simple lenses.

ORTHOSCOPIC



Triplet field lens and simple plano-convex eye lens. Excellent color correction and wide field--35 to 50°. Usually found only on the better telescopes.

HUYGENIAN



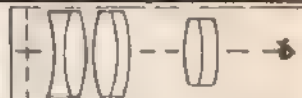
Note image plane falls between lenses. Better color correction than the Ramsden. Excellent for microscopes and telescopes. Field 25 to 40°

KELLNER



Achromatized Ramsden for better color correction. There are several variations of this type. Field 40 to 55°. The most popular type for telescopes

ERFLE



An eyepiece especially designed for extra-wide field with good correction of all aberrations. Field from 65° to 70°. Usually quite expensive

RAMSDENS

MOUNTED RAMSDEN EYEPIECES

We mounted two excellent quality plano-convex lenses in black anodized aluminum barrels instead of chrome-plated brass to save you money. The clear image you get with these will surprise you. Directions for using short focal length eyepieces will be included with the 1/4" F.L. and 1/2" F.L. models.



STANDARD 1 1/4" DIA.

(1/4") Focal Length NO. 30,204 \$4.75 Postpaid

(1/2") Focal Length NO. 30,203 \$4.50 Postpaid

0.917" Diameter

(1/4") Focal Length NO. 30,195 \$3.75 Postpaid

(1/2") Focal Length NO. 30,198 \$3.75 Postpaid

(1") Focal Length NO. 30,194 \$3.50 Postpaid

MOUNTED RAMSDEN EYEPIECE WITH CROSSLINE RETICLE

1" focal length. Outer diam. 0.917". Black anodized barrel. 1-5/8" long. Glass crossline reticle (etched) can be removed easily if not needed.

NO. 30,334 \$6.95 Postpaid

RAMSDEN UNMOUNTED EYEPIECE SETS

These sets contain two plano-convex or double-convex lenses and a drawing which illustrates the proper spacing. You can mount them in a short length of tubing to get inexpensive eyepieces of varying powers. Some of these lenses may have chipped edges or small scratches, but all are guaranteed to be usable.

Approx. Equivalent			Approx. Equivalent		
No.	Focal length	Price	No.	Focal length	Price
30,208	1/4"	\$1.75	5195	1"	.75
30,210	1/2"	1.50	5193	1-1/4"	.60
5198	1/2"	1.00	5192	1-3/8"	.55
5197	5/8"	1.00	5191	1-1/2"	.50
5196	3/4"	.85			
5194	1-1/8"	.65			

SYMMETRICAL

STANDARD 1 1/4" DIA. SYMMETRICAL EYEPIECE

This is a fine aluminum eyepiece mounted in a standard 1-1/4" O.D. mount. Contains 2 coated achromatic lenses. Clear diameter of the lenses 16mm, focal length 3/4".

NO. 30,316 \$6.95 Postpaid



MOUNTED SYMMETRICAL EYEPIECE

O.D. 0.917" (standard microscope size). 2 coated achromats. F.L. 3/4". NO. 30,315 \$5.95 Postpaid

WAR SURPLUS SYMMETRICAL EYEPIECE

Gov't Cost
About \$15.00



Has two identical achromatic lenses. Focal length 2". O.D. of metal mount 27mm.

NO. 30,107 \$3.50 Postpaid

NO. 30,106 coated \$5.00 Postpaid

HUYGENS

Here Are Some Really Terrific Values in Eyepieces

Mounted in chrome plated brass and black trim. Directions for using short focal length eyepieces included. Guaranteed terrific buys at these low prices.



HUYGENS TYPE—STANDARD 1 1/4" DIA.

6mm (1/4") Focal Length NO. 30,063 \$8.50 Ppd.

12.5mm (1/2") Focal Length NO. 30,064 \$8.00 Ppd.

COMBINATION EYEPIECE

NO. 30,065 \$9.00 Postpaid

With this eyepiece you get a high and medium power eyepiece for the price of one. Standard 1-1/4" O.D. Huygens type eyepiece. Consists of a 3-element system when used in two different arrangements. 2 powers can be realized, 10mm F.L. and 20mm F.L. Complete, easy directions for using are included.

KELLNERS—ALSO SEE PAGE 20

KELLNER EYEPIECE

LARGE 50° FIELD



MOUNTED—READY TO USE—1 1/4" OUTSIDE DIAMETER
Focal length 28mm, or slightly more than 1". This focal length is best suited for normal telescope viewing. This is the same set of lenses used in quality military telescopes. We have put them into a new metal cell and added an extens. onto make them fit standard 1-1/4" astronomical telescope eyepiece holders. The cell and holder are black anodized aluminum.

Eye piece includes two achromats, corrected for color and other aberrations. Eye relief 22mm. Diameter of field lens 29.5mm, eye lens 28mm. The wide diameter and long eye relief make it easy to find the image.

For a good, clear image, you'll find it hard to beat this fine quality surplus eyepiece.

NO. 5223

only \$7.95 Ppd.

KELLNER EYEPIECE, same as above, but without adapter (diameter of barrel 37mm)

\$7.00

Ppd.

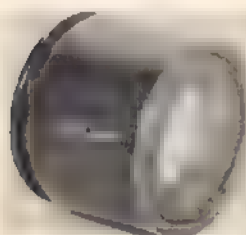
2" FOCAL LENGTH KELLNER EYEPIECE (1 1/4" O. D.)



Many of our customers have asked for a long focal length high quality eyepiece. We made this one from high quality Gov't surplus lenses. Mount is black anodized aluminum. Standard 1-1/4" O. D. Focal length is 2.193" or 56mm. Eye relief is approx 2". Clear dia. of lenses 7/8". Length of mount 2-1/8".

NO. 30,189 \$6.00 Postpaid

MOUNTED WIDE ANGLE KELLNER EYEPIECE



Focal length 30mm. For war surplus anti-aircraft telescope. Contains two cemented achromats. Clear aperture of eye lens 1-3/8", clear aperture of field lens is 1-9/16". Outer diam. of brass mount 2-1/16". Good for rich field teles. & satellite scopes.

NO. 60,144 \$4.50 Ppd.

WAR SURPLUS KELLNER EYEPIECE

COATED, 1 1/4" FOCAL LENGTH MOUNTED—READY TO USE—1 1/4" OUTSIDE DIAMETER



We added a 1-1/4" O. D. aluminum adapter to this so it can be used in astronomical telescopes. Consists of 2 coated achromatic lenses with clear aperture of 1" to give nice wide field.

NO. 50,130 \$5.90 Ppd.

COMPLETE ASSEMBLED BINOCULAR EYEPIECE

NO. 5201 Focal length 22.5 mm. \$4.50

Used on Model M3, 6x30 binocular.

Ppd.

NO. 5203 Focal length 27.5 mm. \$4.50

Used on Model M16, 7x30 binocular.

Ppd.

KELLNER EYEPIECE

F. L. 1" in 1-1/4" O. D. mount of black anodized aluminum. Consists of single element eye lens and achromatic field lens. Coated. Lenses have clear aperture of 7/8" so you get a nice wide field.

NO. 30,274 \$6.95 Postpaid

MOUNTED WIDE ANGLE KELLNER EYEPIECE

• War Surplus • Coated • 2 Achromats

Here's an eyepiece that will be ideal for a rich field telescope or wide angle finderscope. Field of view 70°, focal length 42mm, O. D. of barrel 2-3/16", clear diam. of field lens 1-7/8", clear diameter of eye lens 1-11/16".

NO. 60,234 \$13.50 Postpaid

ERFLES

NEW WIDE ANGLE ERFLE EYEPIECE



Versatile wide-angle eyepiece, particularly suited for use in low power telescope, spotting scopes or binoculars. Lens has 5 elements, consisting of 2 achromats and a single positive lens. It has an effective F.L. of 25mm or 1". Made by B & L for wide angle binocular mounted in

black anodized aluminum mount, 1-9/15" long, 1-3/4" diameter.

NO. 60,225

\$12.00 Postpaid

UNMOUNTED LENSES ONLY with spacing instructions included.

NO. 60,214

\$6.00 Postpaid

TERRIFIC VALUE / ERFLE EYEPIECE



Giant, Wide-Angle Eyepiece Gives You Full 68° Field—Wonderful Image Clarity!

This eyepiece contains three coated achromats, diameters 45, 46 and 38mm. In spiral thread focusing mount. Focus travel approx. 3/8" O. D. of mounting threads 2-1/8". Approx. length 2-1/4". It was designed to give an exceptionally wide field and with good image quality by expert Army optical engineers. We have received numerous letters from

our customers praising this eyepiece. It has now been recommended for use on Satellite telescopes because of its exceptionally wide - field and good image characteristics.

NO. 5160 \$13.50 Postpaid

ADAPTER This screws onto the above Erfle eyepiece to convert to 1-1/4" standard eyepiece size.

NO. 30,171 \$3.95 Ppd.

LARGE ERFLE EYEPIECE 1 1/2" F.L.

WAR SURPLUS BARGAIN

COST APPROX. \$100.00

Large telescopes should have one of these for wide angle viewing. Field of view 65°. Low reflection coated, 5 element, field lens is made of Eastman Kodaks rare earth glass for better aberration correction. Has diopter scale. Smooth focusing 3/8" movement. Outside diameter of attaching threads 3" - 32 threads per inch. Clear aperture of eye lens 2", field lens 1-25/32". Weight 3-1/2 lbs.

NO. 50,091 only \$9.95 Ppd.



ADAPTER of black anodized aluminum tubing, 2-3/4" long, 3-3/8" wide, adapts lens to any 1-1/4" diam. eyepiece holder.

NO. 50,358

\$3.95 Postpaid

ERFLES (Continued)

MOUNTED ERFLE EYEPIECE

F. L. 1-1/16"

Contains 2 coated achromats and 1 single element lens. Diameters 36, 36, 25mm. Complete with adapter of 1-1/4" O. D. to use in astronomical telescopes.

NO. 30,272 (Spiral threads have been cut off). \$12.75 Postpaid



NO. 30,273 NO. 30,272

NO. 30,273 (Spiral threads & adapter left on.) \$12.50

ORTHOSCOPIC

WAR SURPLUS ORTHOSCOPIC EYEPIECE SET, 3/4" F.L.

\$20.00 VALUE



ONLY \$6.50

Focal length 3/4". Mount this wide field orthoscopic eyepiece set yourself and save money. Set consists of 1 cemented triplet field lens and 1 plano convex eyelens. Both lenses are 16mm diameter. Instructions for mounting included.

NO. 30,340 only \$6.50 Postpaid

MAKE-YOUR-OWN EYEPIECES

WAR SURPLUS ACHROMATIC EYEPIECE SETS

Here are some rare buys in "make-your-own" eyepieces. These sets were manufactured for use in military instruments. Simple drawings included show you how to space the elements. Sets marked with (*) are low reflection coated, others not marked are not coated

Stock No.	Focal Length	Type	Dia. of Lenses in mms.	Price PP.
30,340	3/4"	Orthoscopic	16	\$6.50
5230*	1"	Kellner	25, 25	3.00
5231	1"	Kellner	25, 25	2.50
5226*	1-1/16"	Erfle	36, 36, 35	7.50
5228	1-1/8"	Kellner	16, 25	2.00
5229	1-1/4"	Kellner	28.5, 28.5	2.00
5234*	1-1/4"	Symmetrical	34, 34	3.00
5235	1-1/4"	Symmetrical	34, 34	2.00
5239*	1-1/4"	Erfle	54, 52, 52	10.00
5240	2-1/4"	Kellner	54, 54	8.00

NOTE: Symmetrical eyepiece lenses are mounted with about 1/32" space between the lenses.

Blackened Brass

EYEPIECE TUBING

STOCK NO.	LENGTH	I. D.	O. D.	PRICE
117	3"	1 1/8"	1 1/4"	25c
118	2"	1 1/8"	1 1/4"	40c
40,141	3"	1 1/8"	1 3/8"	60c

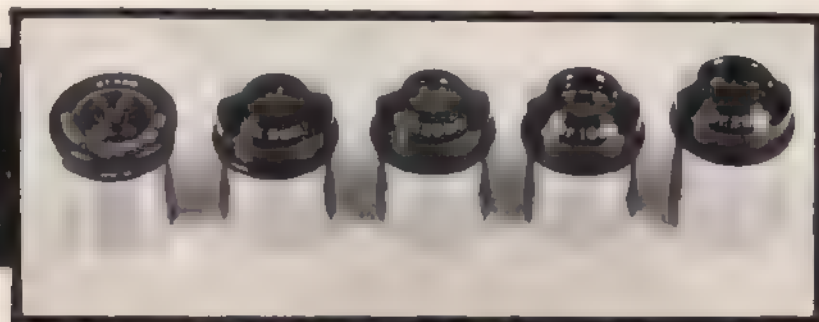
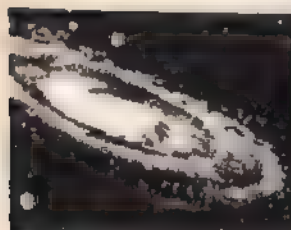
The three diameters listed will give you a slide fit when used together.

Use them as eyepiece, focusing

tube and holder respectively. (See Retaining Rings on next page.)

NOW! A FULL SELECTION OF ORTHOSCOPIC EYEPIECES

Wide flat field---better correction under high magnification--excellent eye relief



The Orthoscopic eyepiece is one of the most important, and best corrected eyepieces for astronomical work. It offers an abnormally wide, flat field, excellent correction, both spherical and chromatic, freedom from ghosts and scattered light, and greater eye clearance than even the Kellner. These are of a four element design, with fluoride coated lenses, and are standard 1-1/4" outer diameter. Precision made of chrome plated brass and aluminum.

NO. 30,364	4mm E.F.L. (gives 300 power with 48" f.l. objective)	\$14.50 Ppd.
NO. 30,404	6mm E.F.L. (gives 200 power with 48" f.l. objective)	\$14.50 Ppd.
NO. 30,405	12.5mm E.F.L. (gives 96 power with 48" f.l. objective)	\$14.50 Ppd.
NO. 30,406	18mm E.F.L. (gives 67 power with 48" f.l. objective)	\$14.50 Ppd.
NO. 30,407	25mm E.F.L. (gives 48 power with 48" f.l. objective)	\$14.50 Ppd.

MISCELLANEOUS

FOCUSING EYEPIECE WITH 3 ROTATING FILTERS

Focal length 3/4". Contains 2 achromatic lenses, 18mm dia., & 37mm F.L. Also, 3 filters, 15mm dia., 1 ea. of lt. neutral, dk. neutral, & yellow. Turn of knob puts either under eyepiece.



NO. 30,354
\$6.00 Postpaid

STANDARD EYEPIECE ADAPTER

Change your substandard eyepieces to standard 1-1/4" O. D. Just slide eyepiece into this adapter and tighten small set screw to hold in place. I. D. 0.917. Black anodized aluminum.



NO. 30,199 \$1.00 Postpaid

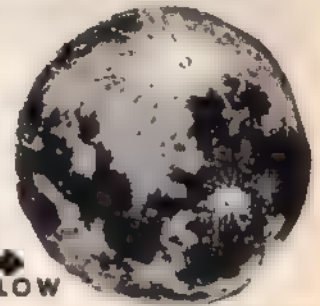
BARLOW LENSES TO DOUBLE OR TRIPLE YOUR TELESCOPE'S POWER



A BARLOW LENS is designed to double or triple the magnification of a telescope with but a very slight

increase in focal length. It eliminates the need for hard-to-use short focal length eyepieces or long, cumbersome telescope tubes. By narrowing the cone of light, it often works wonders in improving performance of eyepieces, particularly those of Huygens or Ramsden type. It is a negative lens, and is often placed in the same tube that holds the eyepiece.

INSTEAD OF THIS



SEE THIS
WITH A BARLOW

We recommend:

OUR COLOR-CORRECTED TWO ELEMENT MOUNTED BARLOW



Don't fail to try this! You won't realize how much greater use you'll get from your telescope till you try it. We've received many compliments on this lens. We have mounted our color-corrected, two-element barlow in an attractive brass tube, glossy black outside, dull black inside. Slide into your 1-1/4" inside diam. draw tube, slide your 1-1/4" standard eyepieces into it, and you get double or triple power plus increased eye relief.

Lens is excellent, color corrected and will give you clear, sharp definition. Focal length is 46.6mm, 18mm diameter, in tube of black anodized aluminum, 3-7/8" long, 1-1/4" outer diameter.

NO. 40,477 \$8.00 Postpaid

LENS only from above, ready for your mounting.

NO. 30,448 \$3.00 Postpaid

TRIPLE YOUR TELESCOPE POWER! 3X BARLOW LENS

These lenses are made for telescopes that have smaller diameter eyepieces than the standard 1-1/4" outer diameter. Mount these between eyepiece and objective and triple your power. Instructions included. Single element lenses, focal length 1-5/16", unmounted.

NO. 30,328 diameter .912" \$2.50 Postpaid

NO. 30,185 diameter .932" \$3.50 Postpaid

3X ADJUSTABLE DIAMETER BARLOW LENS



For telescopes with below the standard 1-1/4" outer diameter eyepieces. Prongs on mount can be opened or closed to fit tubes from 13/16" to 1" outer diameter. Directions for using included.

NO. 30,339 \$5.00 Ppd.

MORE POWER FROM YOUR JAPANESE TELESCOPES



MOUNTED BARLOW FOR JAPANESE TELESCOPES

By inserting this mounted Barlow lens in the eyepiece end of your Japanese telescope, and inserting your regular eyepiece in the end of the Barlow tube, you can increase your telescope's power one to three times. Thus, instead of 60X, you will get 120 to 180 power. Barlow is mounted in two pieces of telescoping brass tubing each 4" long, satin chrome plated on the outside. Inner diameter of large tube and outer diameter of small tube are .965".

This is standard size for most Japanese telescopes. Measure your before ordering. .965" is approx. 31/32" or 24.5mm.

NO. 30,370 \$6.00 Ppd.

TUBING FOR MAKING YOUR OWN AND FOR OTHER USES

The two pieces of telescoping tubing described above. By buying this, you can make microscopes and other instruments to utilize your telescope eyepieces.

NO. 30,368 \$2.30 Ppd.

ORIGINAL

GOODWIN ACHROMATIC COATED BARLOW



For many years, this achromatic coated barlow lens has been the pride and joy of serious astronomers. Due to the death of the owner, Mr. Goodwin, it has not been available for the past two years. NOW, we can offer it, in exact accordance with the original specifications.

The Goodwin Barlow consists of a cemented (two-element) achromat especially made for this use. It has an effective focal length of 44mm. (1.73" or approximately 1-3/4"). The coated achromat is mounted in a cell which is held by spring tension inside a 4" long blackened adapter tube for standard (1-1/4" O.D.) eyepieces. The position of the achromat inside the tube is easily changed to fit the characteristics of individual telescopes, one of the important features of the Goodwin.

Remember, the Barlow is achromatic, coated, mounted in a blackened tube, and as optically perfect as only precision craftsmen can make it. Complete with instructions, in a 4" long adapter tube for standard 1-1/4" eyepieces.

NO. 60,122 \$23.50 Postpaid

EYEPIECE MOUNTS



Smooth trouble-free focusing will help you get professional performance. Real rack and pinion focusing with variable tension adjustment; tube accommodates standard 1-1/4" eyepieces and accessory equipment; light weight aluminum body casting; focusing tube and rack of chrome-plated brass; body finished in black wrinkle paint. Generous focus travel of 4-5/8" for viewing close or distant objects with any objective.

NO. 50,103 For Tubes 2-7/8" I. D. \$12.95 Ppd.
NO. 50,108 For Tubes 3-7/8" I. D. \$13.95 Ppd

STAR DIAGONALS

PRISM STAR DIAGONAL

For comfortable viewing of the stars, etc., at the Zenith position, or high overhead on refractor telescopes using standard size (1-1/4" O.D.) eyepieces, or you can make an adapter for substandard refractors. Contains an excellent quality, aluminized, right angle prism tubes are satin chrome-plated brass, body is black wrinkle cast aluminum. Optical path of system approx. 3-1/2". NO. 70,077 \$12.00 Postpaid



MIRROR STAR DIAGONAL

For comfortably viewing astronomical objects with refracting telescopes. Can be used on standard microscopes, as it is correct size.

Eye piece end takes eyepieces with O. D. of 0.917" and objective end fits into tubes with I. D. of 0.917". Made of fine plastic and contains a first surface mirror.



NO. 30,278
\$3.00 Postpaid

ERECTING SYSTEMS

AMICI PRISM ERECTING SYSTEM

Refractor telescope owners! Now you can have right angle viewing with an erect image. This is ideal for beginners viewing sky objects as image is correct from left to right and no conversion is needed. Adds to your comfort when viewing terrestrial objects. Made for standard 1-1/4" eyepieces. Attractive chrome & black wrinkle finish.

NO. 50,247 \$12.00 Postpaid



ERECTING SYSTEM TO FIT JAPANESE TELESCOPES

Same as above, only in .965" outer diameter to fit most Japanese telescopes. No. 60,116 \$11.75 Ppd.

TELESCOPE PRISM ERECTOR SYSTEM

This will give your refractor telescope an erect image when you want to use it for ground viewing instead of on stars.

Consists of a porro-prism system similar to a binocular erecting system. Fits all refractor telescopes taking 1-1/4" O. D. (standard eyepieces). Chrome-plated brass tubing and black wrinkle cast aluminum. Optical length of system 8".

NO. 70,078 \$12.50 Postpaid



MISCELLANEOUS

REVOLVING TURRET FOR TELESCOPE EYEPIECES

Now, change the power of your telescope just by turning this turret. No need to fumble, feel about. Holds eyepiece of standard 1-1/4" outer diameter. Fits any reflector or refractor taking that size. Requires no alterations on your telescope, inserts as easily as an eyepiece, brings much, much convenience. Made of aluminum and brass, chrome plated on barrels. Clock stop for sure, easy positioning of all powers.

NO 50,355 \$14.50 Postpaid



NOW EASILY, SAFELY MOUNT YOUR LENSES

Custom-designed square-cross-section retaining rings provide far greater bearing surface than the usual round variety. Made of special carbon steel, these retaining rings really hold your lenses in position. Set includes four each of 5 different sizes: .618" O.D. x .035" sq.; .878" O.D. x .039" sq.; 1.136" O.D. x .055" sq.; 1.400" O.D. x .062" sq.; and 1.865" O.D. x .071" sq. Complete set provides superior results previously unobtainable, and fits practically all available tube sizes.

NO. 60,207 \$1.25 Postpaid



TELESCOPE MOUNT

Here is a handy mount for telescopes. At the base it has a 1/4" 1-20 thread socket so that it will screw onto photographic tripods. Made of sturdy zinc coated metal. Telescopes of up to 5-1/4" diam. may be mounted on it. Top piece is 6-1/2" x 2". Has vertical and horizontal movement and may be locked in either position. Comes knocked down--takes a few minutes to assemble. Two 16" long straps are included.

NO. 30,180 \$4.50 Postpaid



I KNOW THAT GIRLS CAN
HAVE AS MUCH FUN AS BOYS
WITH AN EDMUND TELESCOPE



photography with your TELESCOPE



far-away earth photos or studies of astronomical phenomena. Note: for astronomical photography, a clock drive is almost a necessity. (See the Edmund clock drives on page 29)

GIVES 31 TO 65 POWER COMPARED TO USUAL 2-3X OF TELEPHOTO SYSTEMS

TAKE EXCITING PHOTOS OF MOON, PLANETS
AND STARS....

IDEAL FOR LONG DISTANCE SHOTS OF BIRDS,
ANIMALS, SCENES OTHERWISE IMPOSSIBLE.

These photographs show much more graphically than words the tremendous possibilities of photography through the "big eye" of your telescope. A was taken with a regular camera. Band C were taken with our roll film telescope camera with our 4-1/4" reflector. The telephone pole is 300 yards away, the TV antenna about 4 miles away. Think of the prospects this opens up for

CAMERA HOLDER FOR TELESCOPE



With this set you utilize your telescope including the eyepiece plus your own camera to take exciting photos. The set includes a bracket that you bolt to your telescope permanently. Then the rod and camera holder are used whenever you want to take pictures. Camera is easily attached using your regular tripod attaching hole and the set's 1/4-20 knob. The set is made of light weight aluminum, attractively black crinkle painted, and the rod is 28-3/4" in length.

NO. 70,162 \$9.95 Ppd.

SUN PROJECTION SCREEN INCLUDED

White metal screen is easily attached to holder and placed behind eyepiece. Point scope at sun, move screen to focus . . . and you can see sunspots!

PHOTOGRAPHY WITH YOUR TELESCOPE

8 page illustrated booklet, 8-1/2 x 11, covers all phases of this subject. Covers film data, exposures, filters, F values, etc.

NO. 9058 25¢ Postpaid

ALL ABOUT TELEPHOTO LENSES

36 page 8-1/2 x 11 booklet, exactly as titled. Covers projection, afocal systems, all phases of telephoto work.

NO. 9036 65¢ Postpaid

MAKE THIS



FROM



EYEPIECE ASSEMBLY - use to make 30X binocular telescope.

Here is your chance to get a fabulous piece of optical equipment! This unit consists of two eyepieces, two sets of filters, and two rhomboid prisms. Has interpupillary adjustment. Can be used with two No. 6365 achromatic objectives, \$9.50 each, from our stock to make 30X binocular telescope that gives you lifelike stereoscopic vision for celestial or terrestrial observation. Such an instrument sells for \$500, but a MECHANIX ILLUSTRATED article tells how to do it for a fraction of that price. We'll supply copy of article on request. The eyepieces are symmetrical type, F. L. 27mm with two cemented achromats in each eyepiece. Individual spiral focusing adjustment. Diopter scale on each eyepiece. Interpupillary adjustment is made independently of the rest of the optical system. Estimated Government cost was \$450.00

NO. 70,048 \$20.00 Postpaid

TELESCOPE CAMERAS

These are cameras designed especially for taking pictures through your reflecting or refracting telescope that uses standard 1-1/4" O. D. eyepieces. Remove your eyepiece and insert the 5" long tube on the front of the camera into your eyepiece holder. This tube contains a four element lens system that magnifies the image plus extends it from the normal eyepiece plane to the film plane. It also contains a yellow filter. Shutter is a precision German made one with speeds of 1/25, 1/75 and 1/200 of sec. and bulb. Also, has release and cable with lock for time exposure.



ROLL FILM CAMERA:

Uses 127 roll film. Picture area is a circle 1-9/16" in diameter. Big advantage is the ease of using roll film. Includes ground glass for focusing before inserting roll of film.

NO. 70,182 \$29.50 Ppd.

SHEET FILM CAMERA:

Uses 2-1/4" x 3-1/4" sheet film. Picture area is 2" x 2-1/2" with rounded corners. Ground glass included. Advantages are ability to focus for each picture, plus opportunity for immediate developing of any shots. Camera box size is 3" x 4" x 5".

NO. 70,166 \$39.50 Postpaid

FOR REFRACTORS



Although most amateur astronomers prefer the reflector telescope, the refractor, too, has its devotees. The REFRACTOR initial cost is usually three to four times that of the reflector. However, once purchased or made, it is easy to use. We offer materials for making refractors which help overcome the initial high cost of a refractor.

ACHROMATIC OBJECTIVES

The objective lens is the heart of a refractor telescope. We are fortunate to be able to offer color-corrected, air-spaced ones, mounted in cells. These have been field-tested by an independent source and declared "equal to objectives made anywhere today, even at two or three times the price".

These imported achromats are air-spaced. This air-spacing gives the lens four surfaces on which aberrations can be corrected instead of the usual three of a cemented achromat. Hence, you get a beautiful, color-free image, sharp, clear and free from spherical aberration and coma. They are corrected for both C & F lines (secondary chromatic aberration). They are low-reflection coated on all four surfaces. Each of these lenses will resolve to Dawes limit.

Lenses are mounted in black metal cells, with threaded retaining rings.

Available in the following sizes:

Lens			Cell		Price
Dia.	F. L.	No.	O. D.	I. D.	Postpaid
3"	45"	50,162	3-1/8"	3"	42.95
4"	60"	70,128	4-1/8"	4"	80.95
(These cells will fit on our standard aluminum tubing.)					
5"	71"	70,164	*	5"	150.00

*Completely mounted in cell, O. D. 5-1/2" with 5-1/2" flange. Included is adapter for mounting in 6-7/8" I. D. tubing.

Available UNMOUNTED sizes for those who prefer to make an additional saving by designing their own mountings; airspaced:

Dia.		F. L.	No.	Price
				Postpaid
3"	45"		30,190	\$32.00
4"	60"		50,107	69.00
5"	71"		70,163	125.00
6"	90"		70,383	195.00

MOUNTED ACHROMAT

Coated, 70mm. diameter, 360mm focal length.

NO. 6422 \$10.00 Postpaid

WAR SURPLUS HEIGHTFINDER OBJECTIVES

These are mounted, air-spaced achromats, with excellent color and spherical corrections. Gov't. cost was \$100.00 each. The \$12,000.00 heightfinder came equipped with two objectives, perfectly matched for greater accuracy.



Focal length 18.25", clear aperture 2-7/16", f/7.5. Makes an excellent telephoto lens, or use two for a stereo telephoto mount.

NO. 70,037 single objective \$25.00 Postpaid
NO. 70,038 matched pair \$50.00 Postpaid

LOW COST LONG FOCAL LENGTH ACHROMATIC LENS

Build a low cost refracting telescope. The long focal length of this lens (50") will give you 100 power using a 1/2" focal length eyepiece. This is a 2" diameter, low reflection, coated, airspaced type achromat made by the optical company that designed the fine airspaced achromats. You can't buy a lens of this quality and focal length for twice our price.

NO. 30,187 \$9.50 Postpaid

Aluminum cell and retaining ring for 2" dia. lens. Black anodized. Outer dia. of cell 2-5/16". Threads 24 threads to the inch.

NO. 40,151 \$2.00 Postpaid

MOUNTED WAR SURPLUS ACHROMATIC OBJECTIVE

Mtd. in brass cell with retaining ring. Clear aperture of lens 35mm, F.L. 178mm. Used with eyepieces No. 30,194 (\$3.50) and mtd. porro prism No. 50,187 (\$2.50) makes excel. 7X terrestrial scope.

NO. 40,429 \$1.50 Postpaid

ANNOUNCEMENT! LOW PRICED ACHROMATIC OBJECTIVES

To solve the problem of low-cost lenses of good quality for a beginner's telescope we have had these achromatic lenses designed and mass produced. They are swell!

Dia. 32mm (1-1/4"), F. L. 31".

(Will get 62X with 1/2" - 124X with 1/4" eyepiece)

NO. 30,201 \$3.50 Postpaid

Dia. 42mm (1-21/32"), F. L. 41". (Will get 41X with 1" eyepiece - 82X with 1/2", and 164X with 1/4")

NO. 30,202 \$5.00 Postpaid

FOLLOW THE STARS EFFORTLESSLY WITH EDMUND AUTOMATIC ELECTRIC CLOCK DRIVE

★ IDEAL FOR GROUP VIEWING ★ PHOTOGRAPHING THE STARS ★ LONG VIEWING PERIODS.

Any telescope enthusiast who has ever played "oops, there goes that star again" will be thrilled with the Edmund clock drive. Once the star is centered in the field, the drive takes over and keeps it there for any normal viewing period. You devote your entire attention to viewing. It is particularly advantageous for group viewing. Person after person can look, without the problem of relocating the object each time. The clock drive is a must for astro photography.

too-fast drive as with some makes. It has a large 3-1/16" dia. gear and worm with 96 teeth to cut down chatter and backlash and give greater torque. Motor is a high quality 1/15 RPM Cramer. Edmund drive has an accurate friction clutch which enables you to turn scope manually without damage to drive. It is adaptable to a number of telescopes including "home-mades". It will drive any telescope from 12" down, when in balance.

The quality features of the Edmund drive guarantee you automatic, accurate tracking. The drive follows so accurately--within 3 minutes a day--that it is never necessary to turn motor on and off to compensate for

Now! ELECTRIC CLOCK DRIVE ON HEAVY DUTY EQUATORIAL MOUNT WITH PEDESTAL BASE OR TRIPOD

The Edmund clock-drive adds much to viewing pleasure. It brings you automatic tracking ideal for photography or group viewing. So accurate--within 3 minutes a day--that there is never need, as with some makes, for starting, stopping and hand adjusting during normal periods of viewing. It operates on 110 volt, 60 cycle, AC house current. We offer it, attached and ready to run, on a heavy-duty equatorial mount that will easily handle up to and including 8" reflectors and 4" refractors. This mount has bearing action for smooth operation. Big locking knobs on both declination and polar axes. Polar axis is variable for latitude adjustment. 12" cradle securely holds 3" to 10" tubes. It comes in a beautiful baked grey wrinkle finish. Available either with our new metal pedestal mount (for reflectors) or with tripods in sizes for reflectors (32") and refractors (60"). Metal pedestal mount is made from heavy gage steel tubing and is designed to eliminate wobble, torque or vibration. Pedestal is 24" high bringing center of cradle to 30", ideal viewing height. Tripods are made of kiln-dried hardwood. Now, Setting Circles on all Mounts.

NO. 85,111 Clock Drive with heavy duty equatorial mount on pedestal
(A + B) Shipping weight 48 lbs. **\$74.50**

NO. 85,081 Clock drive w/hvy duty, equat. mount on 32" tripod (for reflector) Weight: 38 lbs. **\$69.00**
(A + D)

NO. 85,082 Clock Drive w/hvy duty equat. on 60" legs (for refractor) Weight 42 lbs. **\$78.50**
(A + D)

NO. 85,083 Clock dr., with equat. mt., without legs (32 lbs.) **\$64.00**

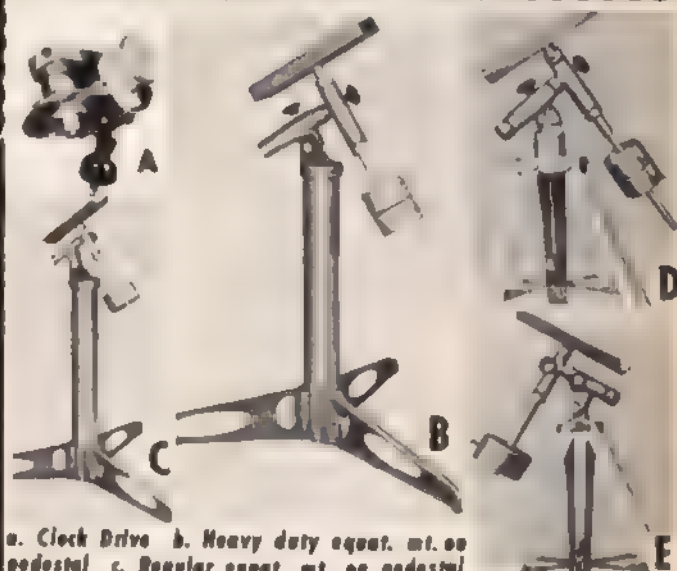
The rugged heavy-duty equatorial mount described above is also available, without the clock-drive.

NO. 85,108 Hvy duty, equat. mount on metal pedestal (46 lbs.) **\$45.00**
(B)

NO. 85,023 Hvy duty equat. mt. on 32" tripod legs (36 lbs.) **\$39.50**
(D)

NO. 85,034 Hvy duty equat. mount on 60" tripod legs (40 lbs.) **\$49.00**
(D)

NO. 85,084 Hvy duty equat. mt. without legs (34 lbs.) **\$34.50**



a. Clock Drive b. Heavy duty equat. mt. on pedestal c. Regular equat. mt. on pedestal d. Hvy duty equat. mt. on tripod e. Regular equat. mt. on tripod

FOR SMALLER TELESCOPES

The same fine Edmund electric clock-drive but mounted, ready to run, on a lighter weight equatorial mount, suitable for use with a 4-1/4" or smaller reflector or 3" or smaller refractor. Mounted on the same sturdy pedestal base as our heavy-duty equatorial mount, or available with 40" and 60" tripod legs, or without legs. While not as rugged as the heavy-duty, you will find this unit will give you lots of pleasure from your telescope by eliminating continual adjustment. These are ideal for the amateur who wants a real clock drive, equatorial mount & sturdy pedestal base or tripod for his telescope at a minimum cost. Now, Setting Circles on all Mounts.

NO. 85,112 Clock drive, standard equat. mount on metal pedestal. (35 lbs.) **\$53.50**
(A + C)

NO. 85,095 Equat. mount, clock-drive on 40" tripod (20 lbs.) **\$48.45**
(A + E)

NO. 85,096 Equat. mount, clock-drive on 60" legs (24 lbs.) **\$52.00**
(A + E)

NO. 85,097 same, no legs (20 lbs.) **\$47.00**

EQUATORIAL MOUNT WITHOUT CLOCK DRIVE

NO. 85,109 Standard equatorial mount on metal pedestal base (33 lbs.) **\$24.00**
(C)

NO. 85,009 Equat. mount on 40" tripod legs (18 lbs.) **\$18.95**
(E)

NO. 85,015 Equat. mount on 60" tripod legs (20 lbs.) **\$22.50**
(E)

NO. 70,257 Equat. mount, NO LEGS **\$17.50 Ppd.**

NOTE: mounts, drives, etc. are TRANSPORTATION CHARGES COLLECT from Barrington, New Jersey

ASTRONOMY

SATELLITE SCOPES

WIDE FIELD 12° SATELLITE TELESCOPE

Now Half Price—Was \$39.50—Now \$19.75 To Close Out!
5-1/2 power. Designed especially for MOONWATCH Gives 12° field of view and 7mm exit pupil. Special mount ideal for ground observation. Also usable as a comet seeker, wide field finder. **NO. 70,074—\$19.75 Ppd**

LOW COST "SATELLITER" TELESCOPE

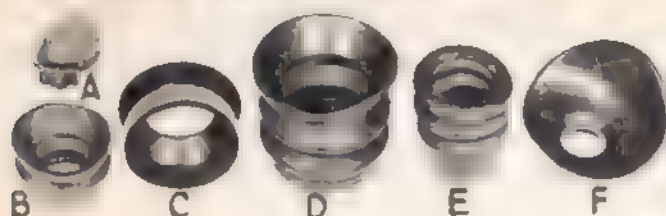
Made from war surplus high quality optics. 5X, 12° field. 10" long, mounted in kraftboard tubes. Large 9mm exit pupil. **NO. 70,150 \$9.95 Postpaid**

SAVE MONEY—BUILD YOUR OWN SATELLITE SCOPE.

As described in Science & Mechanix and Science Experimenter. All the materials you need to build a fine 8° field, 7 power satellite scope. Includes mounted Kellner eyepiece, objective, mirror tubing & full instructions. **NO. 50,184 \$8.50 Postpaid**

EYEGUARDS

WAR SURPLUS RUBBER EYEGUARDS



Taken from various war surplus instruments, these are excellent for microscopes, riflescopes, telescopes and other instruments to cut out stray light and protect your eyes. Hole diameters given are the approximate size of eyepieces these will fit over. In most cases they will stretch a little more.

A) From A10 sextant. Has metal mounting rings that can be removed. Hole dia. 9/16", **NO. 109 \$1.00 Ppd**

B) Hole dia. 15/16", ht. 1-1/8". **NO. 93 30¢ Ppd**

C) Fits our Erfle eyepiece, #5160. Hole dia. 1-7/8", height 1". **NO. 60,054 75¢ Postpaid**

D) From elbow telescope. Hole dia. 1-1/2", height 2-1/4". **NO. 60,099 50¢ Postpaid**

E) Hole dia. 1-9/16", height 1-3/4". **NO. 40,258 50¢ Postpaid**

F) From rangefinder. Hole dia. 13/16", height 1/2". **NO. 60,101 50¢ Postpaid**

Similar to B). From M-38 gunsights and other instruments. Hole dia. 1-1/8", height 1-1/4". **NO. 60,100 45¢ Postpaid**

Similar to A), fits our wide angle Kellner eyepiece #60,144 exactly. No mounting rings. Hole dia. 1-1/2". **NO. 60,212 75¢ Postpaid**

Similar to E). Hole dia. 1-1/4", height 1-5/8". **NO. 95 35¢ Postpaid**

"TELESCOPE FINDERS"

This four-page folder gives complete directions on how to make various types of finder telescopes to attach to your regular astronomical telescope. Shows how to use our war surplus optics and gunsights to make high quality finders at low cost.

NO. 9051 15¢ Postpaid



TELESCOPE FINDERS

TELESCOPE FINDERS

7-power! Wide field for easy finding. Achromatic objective, Ramsden eyepiece, glass cross-line reticle. Length 8", O.D. 1-1/2". Slide focus eyepiece with set screw.

Black anodized finish aluminum tube. Weight 8 oz. Price includes telescope only. **NO. 50,080 \$9.95 Postpaid**



TELESCOPE ONLY

FINDER RING MOUNTS

Cast aluminum black crinkle finish. I.D. of holder 2". 3 locking wing screws on each ring for adjusting. Holes in bases with screws and nuts for mounting to any size telescope. Ring mounts are shown in picture above.

NO. 50,075 RING MOUNTS, Pr. \$3.95 Postpaid

NEW EDMUND 6X FINDER TELESCOPE

A low cost good quality finder complete with adjustable mount. Telescope is white enameled aluminum, has spiral focusing achromatic objective with lightshade. A Ramsden eyepiece (thread focusing), wire crosslines. Mount is cast aluminum crinkle finish and will fit any size telescope. Clear aperture of objective 23mm. Length approximately 9". Weight less than 8 oz.

NO. 50,121 \$8.00 Postpaid

DE-LUXE FINDER TELESCOPE

Here is a de luxe finder that is very impressive looking. The telescope part is our regular 5.5X Moonwatch Satellite scope with crosshairs added. The exceptionally large 12° field plus its excellent light gathering power makes this an excellent finder scope. Plus, you can always take it off for satellite viewing. Twin ring finder mount is included and makes it easy to center the scope. Can be mounted on any diameter tube. **NO. 70,175 \$32.50 Postpaid**



FINDER SCOPE MOUNT

This mount makes it easy to align your finder telescope with your main telescope either refractor or reflector types. Nice black crinkle finish on cast aluminum. Will hold finderscopes up to 1-3/8" O.D. 4 adjusting screws and 2 mounting screws included.

NO. 50,128 \$2.85 Postpaid



TWIN RING FINDER MOUNT



Unit is all in one piece for easy mounting on tubes of any size. Each ring has an inside dia. of 2-7/8". Overall length 6-1/2", 5" high. 3 adjusting screws on each ring to align your finder scope with your telescope. Made of cast aluminum black wrinkle finish.

NO. 70,079 \$9.95 Postpaid

TELESCOPE FINDERS—Continued

RIGHT ANGLE TELESCOPE FINDER

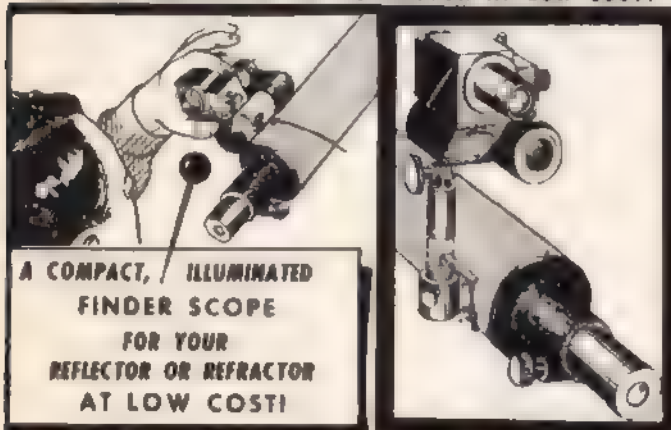
7 POWER



More comfortable and convenient to use than the straight finder scope. Can be mounted close to the telescope eyepiece for fast changing from finder to telescope. Achromatic objective, Ramsden eyepiece, glass cross-line reticle. Black anodized aluminum tube, outer diameter 1-1/2". Weight 9 ozs., length 8". Eyepiece is slide focusing with set screw for locking in place. (Our ring mounts No. 50,075, \$3.95 per pair, postpaid are the correct size for mounting this scope.)

NO. 50,249 \$11.50 Postpaid

A COMPACT, ILLUMINATED FINDER SCOPE FOR YOUR REFLECTOR OR REFRACTOR AT LOW COST!



A COMPACT, ILLUMINATED FINDER SCOPE FOR YOUR REFLECTOR OR REFRACTOR AT LOW COST!

Here's your chance to make yourself a compact, very practical telescope finder. With almost no modification, this Mark 2-C war surplus Drift Sight can be used at unit magnification, or a 2X or 3X telescope may be easily added. Either way, it offers an illuminated cross-hair in a wide field for easier star finding.

The light cover can be turned aside and regular daylight used to illuminate the reticle for nature study or other daytime earthside telescope uses. In addition, you can adapt it to make a small boat pelorus, transit or sighting level, or as an optical finder.

It has built-in battery illumination (D battery, not included), with on-off switch and variable rheostat. The original base can be altered easily for side of tube or top of tube mounting. Full directions are included. The Mark 2-C Drift Sight is a very compact unit, weighing only one pound, 10 ounces. 5" x 3" x 3-1/2" mounted on a 10" brass post. Reticle is of metal, 29mm diam, with a .2mm thick crosshair. Optical reflex sight can be tilted.

NO. 50,094 \$4.50 Postpaid

ASTRO COMPASS OR STAR FINDER WAR SURPLUS

GOV'T COST \$75.00

This is not a magnetic compass that most of us are very familiar with. It bears name of compass as it is a means of indicating heading of aircraft from position of stars.

USES: For simple problems in surveying; to determine position of stars quickly; to teach various celestial coordinates; to enable you to graphically understand star positions; to enable you to determine approximate position on earth or true heading of airplane by sighting on a distant object, moon, planets, stars, etc. (But not sun unless dark filters used);

to give better understanding of earth's motion through stars; for an extremely useful star finder that can be rotated through 60° angles along calibrated degree scale; The star finder has a single eye lens with viewing stop; to take apart for useful components, example: By removing astro compass and using adjustable leveling platform for other instruments; has two spirit levels for aligning; has tangent screw with scale for five precision readings; has nice azimuth scale that is graduated in two degree intervals; has adjustable tilting azimuth scale that is used for angle reference of stars on distant objects. Instructions, carrying case, strap included.

NO. 70,200 \$14.95 Postpaid



Base included.

TELESCOPE LIGHTING SYSTEM

Help Preserve Your Night Vision

Just what you need for comfortable viewing at night. Fits any telescope. Takes one size D flashlight battery. Case has wing nut and clamp for fastening to tripod leg. Complete with two 39" cords, each with grain of wheat lamp and housing at the end. One lamp is controlled for brightness by a rheostat at the top of cell. By drilling small hole in finder tube at plane of reticle, you can illuminate crosshairs to see them clearly at night. The rheostat will give you just the brightness you need. The other cord and lamp which stays at same brightness all the time can be used to illuminate your setting circles, to see which eyepiece you are using, to look at charts or make notes. They are brand new.

NO. 50,219 \$2.95 Postpaid



LIGHT YOUR FINDERSCOPE AND SETTING CIRCLES

METZGER GLARE REDUCTION SCREEN

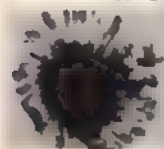
An accessory for refractors or reflectors, cuts down planetary glare & helps observe finer planetary detail. Consists of fine mesh screen painted dull black, mounted in kraft tubing. Two sizes: 7" for 8" reflectors, 5" for smaller reflectors and refractors. NO. 70,138 5" O.D. glare screen \$2.95 Ppd NO. 70,139 7" O.D. glare screen \$3.95 Ppd.



SAVE

ON ASTRONOMICAL ACCESSORIES—BUY FROM EDMUND

OBSERVE THE SUN IN DAYLIGHT WITH YOUR TELESCOPE



Many amateur astronomers watch the sun regularly and record sunspot activity. You'll find it fascinating. The simplest and safest method is SUN PROJECTION. (See our No. 70, 162 on page 27.)

Direct viewing is a trifle sharper, but care must be taken to protect the eyes. The most popular means of direct sun observation is using Herschel wedge, plus sun filter over the eyepiece.

BOOKLET "OBSERVING THE SUN" only 15¢

This four page folder gives all details on using sun filters of all types or refracting and reflecting telescopes. Fully illustrated. Hints and diagrams on Herschel wedges, unsilvered penta prisms, sun projection, filters, etc.

NO. 9056 15¢ Postpaid

UNMOUNTED HERSCHEL WEDGE

Size 40mm x 55mm, wedge angle is 10 degrees. The critical surface is flat to 1/4 wave. Not mounted.

NO. 30,265 \$3.50 Postpaid

MOUNTED HERSCHEL WEDGE

Same size as above but mounted with diagonal holder for reflectors. Fits our rack and pinion holder, No. 50,077, that is also used on our 4-1/4" and 6" reflectors. Holder rod is long enough for 4-1/4", 6" and 8" mirrors. Rod O. D. is 5/32 and 5" long.



NO. 30,266 \$5.50 Postpaid

SUN FILTERS

These filters help protect the eyes from normal visible rays, invisible infrared, and ultraviolet. Thickness 3mm. Percent of light transmission visible, .009%, ultraviolet none, infrared .0190%.

No.	Size	Price
2726	1" x 1"	\$1.00
2727	2" x 2"	2.00
2728	7/8" (round)	1.25
2729	1-1/4" (round)	1.50

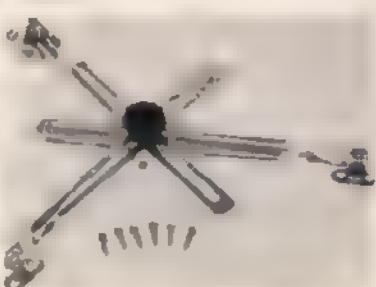
EDMUND SAVES YOU TIME!

Your Order is Shipped Within 24 Hours

After Receipt.

ADJUSTABLE TRIPOD LEG BRACE

Protect your telescope, camera or other instrument. This metal brace fastens to almost any tripod. Keeps tripod legs from spreading and causing telescope, etc., to fall. Each slotted metal arm is 9-3/4" long, 5/8" wide 6 chrome plated wood



screws are included. Bakelite locking knob and wing nut included for quick locking in any position. Can be used on metal tripod legs by drilling legs and using self tapping screws.

NO. 50,232 \$2.00 Ppd.

FLOCK PAPER TUBE LINING

A special paper with a black velvet-like surface which absorbs light and prevents unwanted reflections and glare that spoils the image. Surface has tiny black fibrous pieces glued to it. This provides millions of light traps thus making this material far superior to dead flat black paint. Glue or cement inside your tube. Comes in sheets 27" x 36".

NO. 60,068 per sheet \$1.00 Postpaid

FLAT BLACK ENAMEL

An excellent flat black, ideal for cutting down reflection, glare. One pint.

NO. 60,191 \$1.50 Postpaid

EXPLORE THE MAKEUP OF THE STARS



WITH OUR
STAR
SPECTROSCOPE



If you ever become dissatisfied with ordinary astronomical work, consider star spectroscopy. The spectrum derived from the star's light can be used to determine the star's temperature, its chemical composition, speed of rotation and to explore the makeup of the stars with our star spectroscope. The Edmund Star Spectroscope provides the means of your introduction to this fascinating subject.

The Star Spectroscope is designed for visual spectroscopy. It has three cylindrical lenses, one each for first, second and third magnitude stars. It consists of a train of five prisms of crown and flint glass plus lenses. It fits our standard Huygens telescope eyepieces, but can easily be adapted to other types.

NO. 50,023 \$42.50 Postpaid

SPUR AND WORM GEARS



CONTAINS: 1-Compound spur gear mounted on 3/16" dia. x 13/16" long steel shaft, 120 teeth, 48 pitch, 2.500" pitch dia., 3/32" face, anti-backlash, 26 teeth, 32 pitch, .812 pitch dia., 7/32" face, anti-backlash, 1-Worm gear (steel) single lead right-hand, 32 pitch x .343 pitch dia., 1/4" bore, 1/2" face, 23/32" long overall, 1-Spur gear (brass), 18 teeth, 32 pitch, .562 pitch dia., 3/16" face, 5/16" bore. Worm will mesh with gears.

NO. 30,246 Set of 3 \$3.00 Postpaid

CONTAINS: 1-Compound gear mounted on 3/16" dia. x 13/16" long steel shaft, 84 teeth, 32 pitch, 2.000" pitch dia., 1/8" face, anti-backlash, 32 teeth, 32 pitch, 1.000" pitch dia., 5/32" face, anti-backlash, 1 - 18 teeth, 32 pitch, .562 pitch dia. 3/16" face, 1 - 32 teeth, 32 pitch 1.000" pitch dia., 1/4" face, 1/4 bore gear.

NO. 30,248 Set of 3 \$3.00 Postpaid

SPITZ JR. PLANETARIUM A "ROOM SIZE" PLANETARIUM FOR YOUNG STAR GAZERS

Latest model, a must in this space age. This model operates from regular household current and projects a sky full of stars on the walls and ceiling of any dark room in the house. Projects over 60 constellations and hundreds of stars. Two simple adjustments take you into any month of the year, any place in the Northern Hemisphere. You rotate the sphere by hand to demonstrate daily movement of the stars.

Sphere colorfully finished. About 14" high on a 7 x 7" base. Includes arrow light pointer that plugs into planetarium. Rheostat controls brightness. Guaranteed safe delivery.

AND LOOK WHAT IS NOW INCLUDED!



NEW! SATURN AND SATELLITE PROJECTORS

Trace the paths of Saturn and Sputnik across the sky!



NEW! CONSTELLATION PROJECTOR WITH SET OF 12 SLIDES

Projects mythical constellation figures over stars projected by the Planetarium!

NEW! SOLAR AND LUNAR ECLIPSES

6 types of solar and lunar eclipses can be simulated with this attachment.

FREE 32-page direction book included. Contains valuable information, provides easy identification of stars, constellations.

NEW IMPROVED MODEL



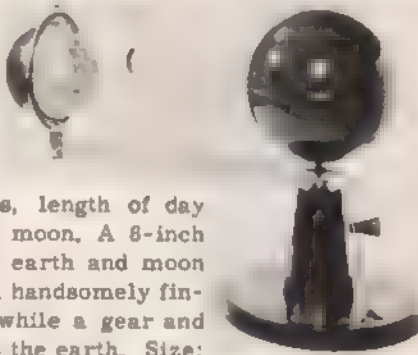
NO. 70,040

\$19.95

Postpaid

UNIVERSAL PLANETARIUM SHOWS SUN-EARTH-MOON RELATIONSHIPS

Here is a versatile, compact instrument designed to teach many space-age facts, demonstrate day and night, seasons, length of day and phases of the moon. A 8-inch diameter sun, the earth and moon are supported on a handsomely finished wood base, while a gear and chain drive orients the earth. Size: height 12", width 8", length 18". Comes complete with illustrated handbook. **NO. 70,415 \$29.95 Post**



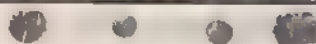
ORRERY (SOLAR SYSTEM REPRESENTATION)

Shows correct position of planets by months. Sun represented by 2-1/2" yellow ball, planets by vari-colored 3/16" balls. All can be rotated freely around sun. Distance from Sun to Pluto is 16". Base 6" sq. Directions included. **NO. 70,374 \$15.95 Postpaid**



SOLAR SCHEMA

Demonstrates graphically the incredible distances between planets, the comparative sizes of sun, planets, moon. The Sun is represented by an 18" vinyl balloon, earth, planets, in proportion by metal balls 1/8" to 1-1/2" diameter. **NO. 80,075 \$45.00 Postpaid**



BATTERY OPERATED PORTABLE JR. PLANETARIUM

Accessory spheres can be used on this model also.

The ideal planetarium for beginners and budget-conscious families. Volume priced to satisfy the new mass interest in the "geography of space"! Completely portable. Operates anywhere, on regular dry-cell batteries, with bright or medium light intensity. Projects over 60 constellations on the ceiling and walls of any darkened room. Can be adjusted for any close-up Northern Hemisphere location, any month of the year.

Complete with flashlight pointer (batteries included). Includes giant 18-1/4" x 25-1/2" instruction sheet with colorful constellation charts that can be hung on the wall. Will beautify any room.

NO. 70,165

\$9.95 Postpaid



INFLATABLE CELESTIAL GLOBE



Useful for the student beginning to study the stars, and the newly interested amateur, 12" heavy-gauge vinyl globe shows major constellations, with stars to 4th magnitude.

NO. 60,166

\$1.40 Postpaid

GIANT SIZE FULL COLOR ASTRONOMICAL POSTCARDS

● Ideal for mailing to your amateur friends.

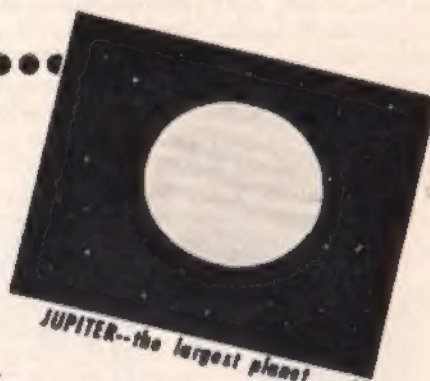
● Equally suitable for framing as room decorations.



SATURN--the ringed planet



MARS--our neighbor in space



JUPITER--the largest planet



A SOLAR PROMINENCE



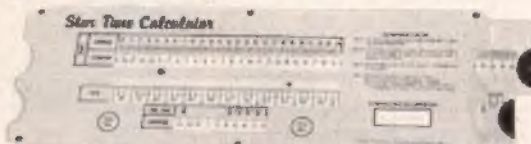
A SUN SPOT

You'll thrill when you see these new astronomical postcards by Edmund. They consist of dramatic full color renderings of Mars, Jupiter, Saturn, a sun spot and a solar prominence, all done by astronomical artist Hugh Stevenson. They are a giant postcard size, 5-1/2" x 7", ideal for mailing to your amateur friends, or equally suitable for framing as decorations for your home.

NO. 40,398 set of all five **50¢** Postpaid

NO. 40,407 SET OF 5 35mm (2"x2") ASTRO-COLOR SLIDES **\$1.50 POSTPAID**

STAR TIME CALCULATOR



This handy slide rule automatically makes the conversion from star or sidereal time to standard time. Saves the amateur astronomer the time and trouble of calculations. Size: 10-1/3 x 3-5/8" of plastic coated cardboard.

NO. 40,399 **\$1.50 Postpaid**

STARS THAT GLOW IN THE DARK

amateur astronomer or space enthusiast can transform his den or bedroom into a realistic night sky. Schools too, can setup authentic sky scenes showing constellations, planets, in a dark room for day-time lectures or explanations of earth and space science. Equally attractive as a means of making your child's room a fairyland, where their canopy of stars will make them welcome rather than fight "lights out". Make ideal holiday decorations, too. Set consists of 125 luminous star decals made of safe, non-radioactive phosphorus. Stars glow after exposure to strong light.

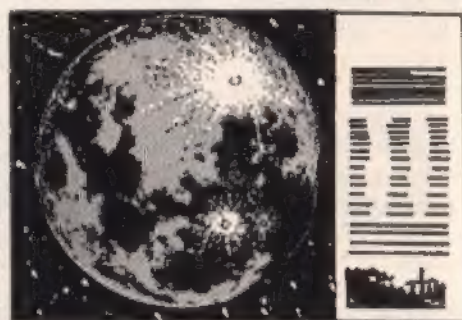
NO. 9298 **\$1.00 Postpaid**



MAP OF THE MOON

EDMUND RECOMMENDED

Edmund Scientific Co. strongly recommends this moon map. Every amateur will find this 35 x 46" photographic reproduction of the full moon a very helpful aid. It is in black and white and has all named lunar formation clearly marked. In addition, it gives a complete index to their locations and much valuable information on the moon.



NO. 9297 **95¢ Postpaid**



COLORFUL, EDUCATIONAL FULL COLOR SPACE-AGE MURAL

Ideal decoration for a child's room, playroom, classroom, or hobbyist's den. Shows rockets, space ships, all authentic designs in full color against a deep sky background. It measures 25-1/2" x 37-1/2" and is educator approved.

NO. 9313 **\$1.50 Postpaid**

At last!

the book every amateur has been seeking **"HOW TO USE YOUR TELESCOPE"**

A down to earth introduction to astronomical telescopes and the stars - ideal for the beginner and full of useful information for any amateur. In clear, simple language, profusely illustrated, non-technical. You'll refer to this booklet often and will rate it a "must".

SIMPLY WRITTEN

CLEARLY ILLUSTRATED.

IDEAL FOR A BEGINNER

A "MUST" IF YOU OWN OR PLAN TO BUY A TELESCOPE

FEATURES MOON MAP, SKY SHOW, DIAGRAMS, SELECTED SKY OBJECTS, ETC.

IT TELLS YOU THINGS YOU SHOULD KNOW ABOUT ASTRONOMICAL TELESCOPES-

LEARN ABOUT

Observing the Planets
Comparing the Planets
Observing the Sun
Finding Sky Objects
Astronomical Photography with your Telescope
Splitting Doubles
Telescope Arithmetic
Sky Sweeping
Dawes Limit

Selecting your Telescope
Power
Light Gathering
Field of View
Telescope Performance -
What to Expect
How to Use your Telescope
What Eyepiece is Best
Equatorial Mounts - How to Use
Collimation and Adjustments
Barlow Lenses and Power Boosters

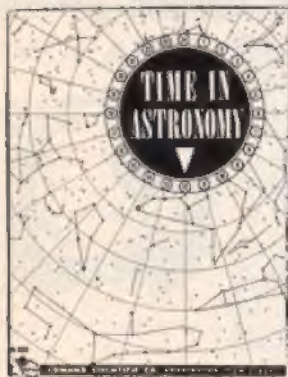


NO. 9055

32 pages 8 1/2" x 11"

only 60¢ Postpaid

Time in Astronomy



READ ABOUT...

KINDS OF SOLAR TIME

TELL TIME BY THE STARS

DATE SCALES SKY CHARTS

STAR POSITIONS

SELECTED SKY OBJECTS

A MUST FOR AMATEURS

USING SETTING CIRCLES

Learn the fascinating facts about time. This 18 page well illustrated booklet tells you in simple terms how to convert from mean to standard time, tells about sidereal time, and many other easy to understand facts about time.

With each booklet we include a sheet of paper printed with 7-1/2" diameter setting circles that you can cut out and glue to masonite, etc. to make your own setting circles.

NO. 9054 60¢ Postpaid

PHOTOGRAPHY WITH YOUR TELESCOPE

New 8 page illustrated booklet tells you how to take pictures through your telescope. Specific set ups for a 6" reflector, 3" reflector, 3" refractor. Everything you need to know, such as film data, Exposure, Filters, "F" values, resolution, image sizes, etc.

NO. 9058 25¢ Postpaid

MAKING A 6" REFLECTOR Brown - Edmund

Complete step-by-step directions on making an astronomical telescope you can be proud to show your friends. Includes many drawings with detailed instructions. Tells you where to buy the parts you will need. No mirror grinding instructions are included.

NO. 9045 15¢ Postpaid

TELESCOPE FINDERS

This four-page folder gives complete directions on how to make various types of finder telescopes to attach to your regular astronomical telescope. Shows how to use our war surplus optics and gunsights to make high quality finders at low cost. **NO. 9051 15¢ Postpaid**

Learn Astronomy The "Fun" Way

53 STAR & PLANET FLASH CARDS



Make learning fun and easy. Just look at the picture, then turn the card for identification - full details given on the back. Set includes 29 constellation cards, 10 on the solar system, 10 star cards, and 4 of other celestial objects.

NO. 60,210 \$1.00 Postpaid

MAKE IT YOURSELF STAR CHART

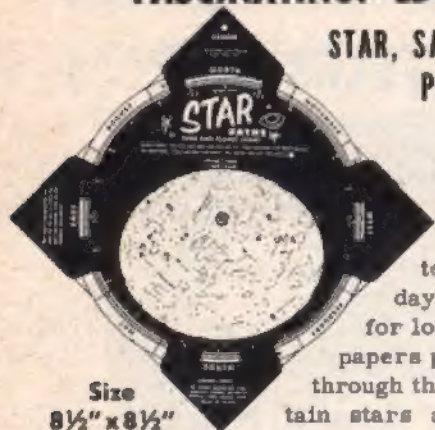
Here is an accurate star and planet chart reproduced on a sheet of 11 x 17 paper, that can be cut out and made into a working star chart.

NO. 9061

25 Charts \$1.00 - 100 Charts \$4.00

FASCINATING! EDUCATIONAL!

STAR, SATELLITE & PLANET PATH FINDER



Size
8½" x 8½"

A "roadmap" of the heavens! This rotating chart shows over 500 stars in the heavens and their relationships to other at any selected day and hour. Excellent aid for locating satellites. Newspapers publish the expected path through the sky in relation to certain stars and degrees above the horizon. Use chart to locate these stars. Degree angle scale is printed on front of chart. Reverse side contains astronomical facts.

NO. 9227 50¢ Postpaid

Available in quantities. Write for details.

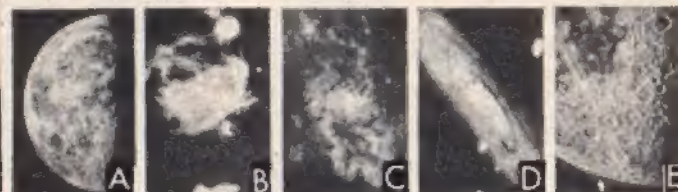
Free with Your Chart

A valuable illustrated booklet showing how to use star paths chart. Easily understood, simplified drawings of celestial sphere - key points on meridian, time correction tables - how to find planets, etc. Size: 4" x 5-1/4". 16 pages.



NEW! ATTRACTIVE ASTRO-MURALS

These dramatic 2' x 3' murals are exact reproductions of famous sky phenomena in black and white. The wealth of detail shown is amazing. Prints are on fine paper. They are done by the Collotype process which has no screen to spoil photo effect. They are ideal decorations for home, school or institutions. Astro murals are endorsed by many leading professional astronomers.



- | | | |
|----------|--|-------------------|
| A | MOON-LAST QUARTER | NO. 70,243 |
| B | GREAT NEBULA IN ORION | NO. 70,244 |
| C | SPIRAL NEBULA IN TRIANGULUM | 70,245 |
| D | GREAT NEBULA IN ANDROMEDA | 70,246 |
| F | SATURN | NO. 70,247 |
| E | SOUTHERN SECTOR OF MOON | NO. 70,248 |
| G | SOLAR PROMINENCE | NO. 70,249 |
| | (not illus.) MOON-14 DAYS | NO. 70,252 |
| H | SPIRAL NEBULA IN CANES VENATICI | NO. 70,251 |

I SPIRAL NEBULA IN ANDROMEDA EDGE ON VIEW NO. 70,250

Any mural listed above. **\$6.00** Postpaid

TO PROMOTE UNDERSTANDING OF

The Space Age

and INTERPLANETARY EXPLORATION



3

**STAR AND
SPACE MAPS**

only **\$1.25**



These attractive maps will please any one young or old, who is interested in outer space. They make ideal wall decorations and contain much valuable information on the moon, planets and stars. For your \$1.25, you get not one, but three giant maps: **THE SOLAR SYSTEM**, a giant colorprint map, 50" x 38", showing solar statistics and including detailed moon map and twelve telephoto pictures of Moon, Sun, planets. **WORLD STAR CHART** is a 50" x 38" and locates stars for any time of year for any position on Earth. The third, **MAP OF THE SOLAR SYSTEM**, is 35" x 48", shows planets, zodiac, etc.

NO 9245 (Set of 3) \$1.25 Ppd.

BEST OF THE STANDARD BOOKS ON ASTRONOMY

MAKING YOUR OWN TELESCOPE Thompson

Here is the book we recommend for the amateur making his first reflecting telescope. Gives complete, step-by-step directions on grinding your own mirror. Full directions on making your own telescope mount. Even if you don't plan to build your own right now, this will be a valuable addition to your telescope "know-how". Cloth bound, 211 pages. **NO. 9203 \$4.00 Postpaid**

HOW TO MAKE A TELESCOPE

This book by Jean Texereau, President of the Committee on Instruments of the Astronomical Society of France contains more elaborately illustrated material on mirror grinding than Thompson's book (above) but is less comprehensive on mounts. For example, no data on equatorial mounts is included. Well worth having in your library, however. Cloth bound, 6-1/2" x 10-3/8", 191 pages. **NO. 9243 \$4.00 Postpaid**

AMATEUR TELESCOPE MAKING Ingalls

A symposium of articles on every conceivable subject connected with amateur telescope making, each chapter written by an expert in his field. Some sample chapters: 'Mirror Making for Reflectors', 'Making Eyepieces', 'Accuracy in Parabolizing', 'Simple Clock Drive', 'The Spectrograph in Astronomy', 'Lens Production', 'Schmidt Camera Notes', 'Optical Bench Testing'. Published by SCIENTIFIC AMERICAN

NO. 9208 AMATEUR TELESCOPE MAKING, Book I
Cloth Bound, 497 pages. Deals with basic subjects. **\$5.00**

NO. 9209 AMATEUR TELESCOPE MAKING, Book II
Cloth Bound, 650 pages. Some basics, some advanced. **\$6.00**

NO. 9224 AMATEUR TELESCOPE MAKING, Book III
Cloth Bound, 644 pages. Advanced subjects, refinements. **\$7.00**

AMATEUR ASTRONOMERS HANDBOOK Sidgwick

This book is primarily a reference book. Chapters on light grasp, telescope function, resolution, types of objective glass, oculars, mountings, drives, testing, atmosphere and seeing, photography, time-clocks, and other subjects. **NO. 9233 \$10.00 Postpaid**

DISCOVER THE STARS Johnson - Adler

A paper bound volume, 130 pages. Beginner's guide to astronomy. Radio astronomy, navigation, solar energy, simple make-your-own instruments. Photographs and diagrams. 146 pages. **NO. 9225 \$1.00 Postpaid**

NORTON'S STAR ATLAS

This reference handbook contains 9,000 stars, nebulae and star clusters; with descriptive lists of objects mostly suitable for small telescopes. Includes a sketch map of the moon, information on the sun, planets, spectroscopy, observing, astronomical terms plus eighteen star maps. **NO. 9234 \$5.50 Postpaid**

ASTRONOMY MADE SIMPLE

Here is an excellent, inexpensive paper bound book on astronomy, 8 x 10-3/4 with 192 pages. Explains the universe, all about stars, navigation, telescopes and their uses, solar system. Includes over 250 illustrations, glossary of astronomical terms, and a section on how to build your own telescope. It is an ideal beginning self-study and reference book. Very complete and informative. **NO. 9229 \$1.45 Postpaid**

BEST OF THE NEWEST BOOKS ON ASTRONOMY

GOLDEN BOOK OF ASTRONOMY

All the wonders of the skies, the vast distances, the galaxies, the mysteries of the planets and our own Earth, of the moon and the story of how man may launch himself into space, are told in this big 96 page, 10-1/4 x 12-3/4" book. Each page contains large colorful pictures, and the book is so written that a child or young beginning amateur astronomer will find it fascinating. **NO. 9244 \$3.95 Postpaid**

DICTIONARY of ASTRONOMY and ASTRONAUTICS

Concise definitions of over 2,200 terms and concepts related to astronomy and astronautics - a wide gamut of terms ranging from those as old as man to those as new as the Space Age, on the threshold of which he now stands. Dr. Spitz is Coordinator of Visual Satellite Observations for the Smithsonian Astrophysical Observatory, Cambridge, Mass. Mr. Gaynor is a contributing editor to Encyclopedia Britannica. **NO. 9238 \$6.00 Postpaid**

OUTER SPACE PHOTOGRAPHY FOR THE AMATEUR

By Henry E. Paul. A book designed specifically to encourage interest in the hobby of space-age photography and a guide to telescopes and photo equipment to use. 124 page, 5 x 8-1/4" hard bound. **NO. 9312 \$2.50 Postpaid**

PORTRAIT OF THE UNIVERSE BOOK OF STAR PHOTOS

All the astronomical phenomena actually "sat" for their portraits before the camera-telescopes of Mt. Wilson, Palomar, Lick, and Yerkes Observatories. 6" x 6". Handy spiral binding. Covers planets, solar phenomena, star clusters, etc. 32 black and white photographs. 66 pages. **NO. 9296 \$1.95 Postpaid**

1001 QUESTIONS ANSWERED ABOUT ASTRONOMY

Here are key questions about the universe around us - planets, satellites, meteors, comets, stars and constellations, galaxies, their origins, motions, distances, colors, methods and instruments used to study them, and every other conceivable fact and theory about them. Including biographies of the great astronomers of all times. 420 pages, 5-1/4 x 8", paperbound. **NO. 9318 \$2.45 Postpaid**

LAROUSSE ENCYCLOPEDIA OF ASTRONOMY 506 pages.

We recommend this book. Covers the entire field of Astronomy. Very handsomely illustrated, easily read and understood. Truly a book for the laymen. It is a giant sized volume (8-1/4 x 11-1/2) prepared by experts in astronomy, astrophysics, meteorology, spectroscopy, astro-photography, astrochemistry and nuclear physics. It covers solar system, earth, planets, moon, comets, meteors. **NO. 9284 \$15.00 Ppd.**